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Supreme Court, U.S.
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In The
Supreme Court of the United States

TOYOTA MOTOR CORPORATION,
TOYOTA MOTOR NORTH AMERICA, INC., and
TOYOTA MOTOR SALES, U.S.A., INC.,

Petitioners,

v.

PAICE LLC,

Respondent.

On Petition For A Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Whether the Federal Circuit erred in holding that a patentee-inventor who criticized and disavowed subject matter in the specification of his patent may later recapture that criticized subject matter under the doctrine of equivalents simply because the criticism was sufficiently ambiguous that the court could not be sure what portion of the criticized subject matter had been "clearly excluded."

2. Whether the Federal Circuit's heightened "clearly excluded" standard for determining when a disavowal of subject matter in a patent specification limits the range of equivalents improperly rewards vagueness and ambiguity in the drafting of patents and is thus inconsistent with the public notice function of a patent and with important public policies requiring patent clarity, as set forth in the Patent Statute and the precedent of this Court.

CORPORATE DISCLOSURE STATEMENT

Petitioner Toyota Motor Sales, U.S.A., Inc. is a wholly-owned subsidiary of Petitioner Toyota Motor North America, Inc. Toyota Motor North America, Inc. is owned 99.92% by Petitioner Toyota Motor Corporation and 0.08% by Toyota Motor Sales, U.S.A., Inc. No publicly held corporation owns 10% or more of the stock of Toyota Motor Corporation.

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CITATIONS FOR OPINIONS BELOW

The opinion of the Court of Appeals (Appendix A) is reported at 504 F.3d 1293 (Fed. Cir. 2007). The decision of the district court denying the petitioners' motion for judgment as a matter of law or, in the alternative, for a new trial (Appendix B) and the order of the Court of Appeals denying the petition for rehearing and rejecting the suggestion for hearing en banc (Appendix C) were not reported.

BASIS FOR JURISDICTION IN THIS COURT

The Court of Appeals filed its opinion on October 18, 2007. That Court denied the petitioners' petition for rehearing and rejected the suggestion for hearing en banc on November 29, 2007. 28 U.S.C. § 1254(1) confers jurisdiction on this Court to review on writ of certiorari the opinion of the Court of Appeals.

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

Article I, section 8, clause 8 of the Constitution provides:

> "Congress shall have the power ... to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their Respective Writings and Discoveries."

35 U.S.C. § 271(a) provides:

> "Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent."

STATEMENT OF THE CASE

This case raises an important question of patent law that should be addressed by this Court. When a patentee-inventor tells the world in the patent specification that the disclosed invention does not embrace an existing technology that is well known by those in the industry, businesses must be able to rely on those statements when structuring their activities and developing products that may incorporate that technology. Current Federal Circuit law, however, allows patentees to pull a classic "bait and switch"—telling the industry one thing in the patent, and later telling a court something altogether different. The only time the Federal Circuit will hold a patentee-inventor to a prior disavowal of existing technology is if the patent text "clearly excludes" specific elements of the prior art. This heightened standard, though, rewards vagueness and creates a reverse presumption that has no support in the Patent Statute, is in conflict with the guidance this Court has provided in other patent cases, and can lead to illogical and inconsistent results. Moreover, rewarding the use of vague language can

stifle product development and imperil the certainty and transparency our patent system was intended to foster.

The settled facts and important products at issue in this proceeding make this an appropriate case for this Court to accept in order to resolve this important patent law question. Petitioner, Toyota, is a highly respected innovator in the field of automotive technology, and its PRIUS® automobile is widely credited as being the world's first commercially viable hybrid car. Indeed, hybrid vehicles, such as the PRIUS®, are being promoted by the federal government as important components of our modern, green economy, as the widespread use of such vehicles as replacements for gasoline-only cars will not only lessen our nation's dependence on foreign oil by delivering significant increases in fuel economy, it will also significantly reduce tailpipe CO_2 emissions, a primary cause of global warming.

Predictably, though, Toyota's success in perfecting hybrid technology has made it the target of the patent litigation companies that stalk legitimate industry. These companies are in the "business" of taking patents on worthless ideas that have already been shunned by industry, and spinning them into legal gold before juries in plaintiff-friendly jurisdictions. Serious concerns have been voiced as to these companies and their practices, see, e.g., *Overstock.com, Inc.* v. *Furnace Brook, LLC*, 420 F. Supp.2d 1217, 1218, 1222-23 (D. Utah 2005), and apt parallels can be drawn between these modern

"opportunistic licensors" and the "patent sharks" who disrupted agrarian commerce during the Gilded Age. See generally Gerard N. Magliocca, *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, 82 NOTRE DAME L. REV. 1809 (2007).

Respondent, Paice LLC, is one such patent litigation company, and it is attempting to impose a royalty "toll" on the PRIUS® and similar Toyota hybrid vehicles based on an obscure patent. Specifically, Paice asserts that even though Toyota's hybrid vehicles do not include all of the elements that define the supposed "invention" at issue, they nonetheless should be found to infringe under the "doctrine of equivalents." This is despite the fact that the Toyota vehicles use the same technology that the patentee-inventor *criticized* in the patent text. In fact, when Paice originally tried to convince Toyota to adopt its patented design, Paice described the Toyota system as "an EXACT copy" (emphasis in original) of the inferior, criticized technology. App. 37.

The Federal Circuit, however, concluded that because the patentee-inventor's description of the criticized technology in the patent was susceptible to multiple interpretations, it was "far from obvious" to the court which elements of the criticized technology were being disavowed. As a result, the Federal Circuit refused to find *any* estoppel and permitted Respondent to assert the patent against a product that incorporated the elements of the criticized technology that the court could not be sure had been disavowed. The only legal justification the appellate court could provide for

implementing this heightened standard and rewarding the patentee-inventor for being less than clear in the disclosure, though, was its own case law, in which the "clearly excludes" disavowal standard sprouted out of thin air and has rapidly grown into inviolable doctrine today.

As this Court has explained on multiple occasions, however, a patentee-inventor alone possesses the power of the pen, and thus bears the responsibility for putting the world on clear notice as to the nature and scope of a claimed invention. Ambiguities in the patent—whether in the claims, the prosecution history, or (as here) the specification—should therefore give rise to limiting presumptions. See *Warner-Jenkinson Co., Inc.* v. *Hilton Davis Chemical Co.*, 520 U.S. 17, 33 (1997) ("Mindful that claims do indeed serve both a definitional and a notice function, we think the better rule is to place the burden on the patent holder to establish the reason for an amendment required during patent prosecution."); *Festo Corp.* v. *Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 740 (2002) ("Just as *Warner-Jenkinson* held that the patentee bears the burden of proving that an amendment was not made for a reason that would give rise to estoppel, we hold here that the patentee should bear the burden of showing that the amendment does not surrender the particular equivalent in question. This is the approach advocated by the United States . . . and we regard it to be sound."). Allowing a patentee-inventor to benefit from an ambiguity that

the inventor alone had the power to eliminate undermines a patent's "notice" function.

This is especially true in the present case, where there is evidence that those of ordinary skill in the relevant art—that is, the audience for whom a patent specification is supposed to be written—in fact reasonably understood what elements of the criticized technology had been disavowed in the patent. This point of view, though, is rendered irrelevant under the Federal Circuit's heightened "clearly excludes" test because that test is applied from the standpoint of the court and demands absolute certainty as to the scope of the disavowal, rather than applying a standard of reasonableness.

The question for this Court therefore is whether the Federal Circuit's heightened standard is proper. Should the lack of clarity in a disavowal made in the patent specification result in a presumption that the disavowal resulted in *no* restrictions on the patent, or should the ambiguity give rise to an estoppel commensurate in scope with what one of ordinary skill in the art would reasonably understand had been disclaimed? Logic demands that this Court's notice-driven presumption principles apply equally to all aspects of a patent—that is, to the claims, the prosecution history, *and* the specification. Certainty requires that this Court at least take up and clarify this important question of patent law.

A. The Factual Background

1. The Patent-in-Suit

The Paice patent (U.S. Pat. No. 5,343,970) is not for the basic concept of a hybrid electric car. The patent simply discloses a narrow (and impractical) design for a specific hybrid drive system that, tellingly, no automobile manufacturer has ever adopted. App. 86.

The two claims still asserted in this action (Claims 11 and 39) are emblematic of the "invention" disclosed in the patent. Both recite a combination of gear train elements—including an internal combustion engine, an electric motor, and what is termed a "controllable torque transfer unit" ("CTTU"), which combines the torque from the engine and from the electric motor in controllably different ways—in addition to a separate "controller" that has been adapted to perform certain control system functions. App. II-25, II-27.

2. The Berman Prior Art

At the time the Paice patent application was filed, hybrid electric cars were well known. Thus, when setting forth the supposed novelty of the invention, the patentee-inventor found it necessary to discuss and distinguish several prior art designs. These included the expired prior art "Berman" patents (U.S. Pat. Nos. 3,566,717 and 3,732,751), which disclosed a design with a planetary gear system that differed from Paice's CTTU. The patentee-inventor discussed these patents in detail in the patent specification and

then expressly disavowed them as falling outside the scope of the claimed invention:

> *The present invention relates to . . . a parallel hybrid vehicle, but addresses certain substantial deficiencies of the Berman et al. design.* For example, Berman et al. show two separate electric motors/generators powered by the internal combustion engine to charge batteries and to drive the vehicle forward in traffic. This arrangement is a source of additional complexity, cost and difficulty, as two separate modes of engine control are required, and the operator must control the transition between the several modes of operation. *Further the gear train shown by Berman et al. appears to be quite complex and difficult to manufacture economically.*

App. II-15 (emphasis added); see also App. 30-31 (in the opinion below, the Federal Circuit acknowledged that this statement by the patentee-inventor amounted to a "disavowal" of Berman).

The Berman prior art design did not disclose the "controller" discussed and claimed in the Paice patent. Thus, Berman is not invalidating prior art under 35 U.S.C. § 102. Berman, however, disclosed a motor/engine/gear combination as part of its "gear train," and the Berman gear train is the very structure the patentee-inventor disavowed. App. II-15.

According to the Federal Circuit, though, it was "far from obvious" based on the above-quoted language from the Paice patent "*which portion* of the gear train

is supposed to be 'quite complex and difficult to manufacture economically.'" App. 35 (emphasis added). In the appellate court's opinion, "Paice *may have* been referring to the arrangement of the motors, engine, and planetary gear set, *or* to the control system described in the [Berman] patents." *Id.* (emphasis added). As will be discussed below, because the Federal Circuit could not be absolutely certain based on the patent text which portion of the Berman "gear train" the patentee-inventor had disavowed, the court did not find there to be any estoppel at all.

3. The PRIUS® Hybrid System

As the jury properly found, the Toyota PRIUS® does not use a CTTU. Instead, the vehicle uses a planetary gear train with the same motor/engine/gear configuration discussed in Berman.

In fact, Toyota deliberately adopted the Berman gear train design (which was already in the public domain) during development of the PRIUS®, choosing it over several other hybrid configurations it considered. App. 93-95. And although Toyota has improved the performance of other components in its hybrid system over the years, the basic "Berman" configuration of the gear train has remained unchanged. App. 101-103.

For several years, Paice tried to interest Toyota in using its patented "CTTU" design instead of the Berman design. During this process, Paice repeatedly criticized the Toyota system as being the same as Berman, and went so far as to publicly state at a

trade show that Toyota's hybrid configuration was an "exact copy" of the Berman design. App. 37.

4. The Paice "Business" Plan

When Paice was founded by the inventor of the patent-in-suit, the plan was for Paice to design and license hybrid automotive technology. No one in the automobile industry, however, was interested in Paice's technology, and no one ever agreed to a license. App. 86. The plan failed.

After years of wasted effort, Paice adopted a new business plan calling for "involuntary licensing"—that is, forcing businesses to take licenses on technology they had already rejected on the merits. Thereafter, Paice became a patent litigating company with a plan centered around seeking investors to fund patent litigations. App. 88-89.

This litigation commenced shortly thereafter.

B. The Decisions Below

1. The District Court Proceedings

The first target of Paice's new litigation strategy was Toyota, whose PRIUS® was the best selling hybrid in the United States. Paice alleged that the PRIUS® infringed ten claims of three patents and sought to enjoin future sales of the car. As is often the case with investor-driven patent litigation companies, Paice filed its suit in the United States District Court for the Eastern District of Texas.

During the jury trial, the "CTTU" limitation that appears in Claims 11 and 39 was of primary importance. Ultimately, the jury concluded that the Toyota PRIUS®, which uses a planetary gear configuration like the one disclosed in Berman, did not have a CTTU element. App. 77.

The jury thus returned a verdict of no literal infringement on all asserted claims. The jury, however, accepted Paice's argument that a Berman-style planetary gear and its associated elements should be considered the legal "equivalent" of the disclosed CTTU. The jury therefore found the PRIUS® to infringe Claims 11 and 39 of the asserted patent under the doctrine of equivalents. App. 77.

Toyota moved for judgment as a matter of law, arguing, among other things, that the jury's finding that a Berman-style gear was the equivalent of the claimed Paice CTTU could not stand in view of the disavowal of Berman that the patentee-inventor made in the patent specification. The district court, however, denied the motion, explaining that although the patent contained certain "unfavorable statements" about the Berman planetary gear system, those statements did not "clearly disavow" the use of those systems in the claimed invention. App. 68 (relying on Federal Circuit precedent for the applicable standard).

2. The Federal Circuit's Opinion

Toyota appealed to the Federal Circuit on a range of issues, including on the subject of whether a Berman

planetary gear could be deemed to be the legal equivalent of a CTTU in view of the statements that the patentee-inventor made about Berman in the patent. To that end, Toyota argued that the patent contained a disavowal of Berman, and that those of ordinary skill in the art (including people at Paice) recognized that the elements of the Berman technology being disavowed in the patent included the Berman planetary gear set. App. 30-31.

The Federal Circuit agreed with Toyota in part, acknowledging that the patent text contained "criticism and disavowal of [Berman] in the written description. . . ." App. 31. The appellate court, however, disagreed with Toyota as to "the effects of criticism and disavowal" in patent cases.

Specifically, it was not clear to the appellate court which elements of the Berman gear train the patentee had disavowed in the patent text. To the court, this lack of clarity was critical to its analysis:

> [I]t is far from obvious which portion of the gear train is supposed to be "quite complex and difficult to manufacture economically." Paice may have been referring to the arrangement of the motors, engine, and planetary gear set, or to the control system described in the [Berman] patents. The intrinsic evidence simply does not provide any resolution to this ambiguity.

App. 35. Because of the ambiguity, the Federal Circuit refused to find *any* estoppel, explaining that

for estoppel to apply, the patentee must have "clearly excluded" the specific subject matter that is later sought to be recaptured under the doctrine of equivalents. App. 33, 35-36. That is, a disavowal that is only *reasonably* seen as including the subject matter in question is given absolutely no effect.

When applying this heightened "clearly excludes" standard, the Federal Circuit also did not approach it from the viewpoint of one of ordinary skill in the art. Instead, the court merely substituted its judgment for that of those in the industry to whom the patent disclosure was intended to be directed.

The net effect of the Federal Circuit's application of its "clearly excludes" standard was to reward vagueness. Under this heightened standard, the disavowal of prior art in the patent text is presumed *not* to give rise to an estoppel unless the scope of the disavowal is "clear" and "specific" in the eyes of the court. Moreover, this reverse presumption evidently applies *even if* those skilled in the relevant art would reasonably understand the patent as containing a disavowal of specific subject matter and have structured their product development efforts accordingly. Based on this flawed reasoning, the court affirmed the finding of infringement under the doctrine of equivalents as to Claims 11 and 39.

REASONS FOR GRANTING THE WRIT

This Court has consistently held that a patentee-inventor bears the sole responsibility for putting the world on notice as to the nature and scope of a claimed invention. Through its "clearly excludes" disavowal standard, however, the Federal Circuit has turned that precedent on its head and is now openly encouraging patent drafters to be vague when describing the prior art by making it known that only "clear" and "specific" language can lead to an estoppel. As this rule conflicts with the guidance this Court has provided in other patent cases and undermines the role of patents in providing notice to those skilled in the art, it should be reviewed.

Because the Federal Circuit has exclusive appellate jurisdiction over patent disputes, 28 U.S.C. § 1295(a), the court's "clearly excludes" standard will not be further vetted by any appellate court below. Accordingly, this Court is the only (and the most appropriate) forum to obtain meaningful review, and Toyota asks that it grant the requested writ.

I. The Federal Circuit's Reverse Presumption Conflicts With Settled Patent Law Precedent

A patent represents a contract between the patentee-inventor and the public. E.g., *Grant* v. *Raymond*, 31 U.S. (6 Pet.) 218, 242 (1832). In exchange for disclosing an invention and dedicating it to the public for use in the future, the patentee-inventor

is given the exclusive right to practice the invention during the life of the patent. *Id.* at 241-242.

Because a patent amounts to a contract, ambiguous language in the written patent "agreement" should therefore be construed against the interest of the patent drafter. Cf., e.g., *Mastrobuono* v. *Shearson Lehman Hutton, Inc.*, 514 U.S. 52, 62-63 (1995) ("the common-law rule of contract interpretation [is] that a court should construe ambiguous language against the interest of the party that drafted it"). "The reason for this rule is to protect the party who did not choose the language from an unintended or unfair result." *Id.* at 63.

> Where one party chooses the terms of a contract, he is likely to provide more carefully for the protection of his own interests than for those of the other party. He is also more likely than the other party to have reason to know of uncertainties of meaning. Indeed, he may leave meaning deliberately obscure, intending to decide at a later date what meaning to assert. In cases of doubt, therefore, so long as other factors are not decisive, there is substantial reason for preferring the meaning of the other party.

Restatement (Second) of Contracts, § 206, Comment a (1979) (quoted in *Mastrobuono*, 514 U.S. at 63, n.10).

In almost every corner of patent practice, this rule is faithfully followed. A patentee-inventor may not be vague in the written materials submitted to the public (represented by the government) when seeking

a patent and then later turn around and argue, once the contract has been sealed, that the benefit the public granted in the form of patent protection is greater than what a reasonable person would have understood it to have been at the time of contract formation. Ambiguity is *not* rewarded.

For example, in *Warner-Jenkinson*, this Court held that when the publicly-available prosecution history of a patent does not reveal the reason a limiting amendment was made to the claims, a presumption arises that the amendment was for a "substantial reason related to patentability" and the patentee-inventor is estopped from using the doctrine of equivalents to expand the scope of the amended claim element. 520 U.S. at 33-34. In reaching that conclusion, this Court specifically rejected the suggestion that the *absence* of an apparent reason for the amendment should avoid an estoppel. *Id.* at 33 ("Mindful that claims do indeed serve both a definitional and a notice function, we think the better rule is to place the burden on the patent holder to establish the reason for an amendment required during patent prosecution.").

Similarly, in *Festo*, this Court addressed the question of the scope of the estoppel that results from a limiting amendment, and once again put the burden on the patentee-inventor to prove that an amendment did not amount to a surrender of a particular equivalent structure. 535 U.S. at 740. This Court explained that "[a] patentee's decision to narrow his claims through amendment may be presumed to be a general disclaimer of the territory between the

original claims and the amended claims," and that estoppel will apply unless the patentee can rebut the presumption. *Id.* at 740-741.

In most circumstances, the Federal Court itself also follows this same rule and places the burden on the patentee-inventor to draft clear "contract" language. See, e.g., *Markman* v. *Westview Instruments, Inc.*, 52 F.3d 967, 980 (1995) (en banc) (if the patentee-inventor intends for something other than the ordinary meaning to apply to a claim term, he or she must "clearly define[ ]" the term in the specification), aff'd, 517 U.S. 370 (1996); *Athletic Alternative, Inc.* v. *Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996) ("Where there is an equal choice between a broader and a narrower meaning of a claim . . . the notice function of the claim [is] best served by adopting the narrower meaning."); *Halliburton Energy Serv., Inc.* v. *M-I LLC*, No. 2007-1149, 2008 U.S. App. LEXIS 1421, at *8 (Fed. Cir. January 25, 2008) ("Because claims delineate the patentee's right to exclude, the Patent Statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent. Otherwise, competitors cannot avoid infringement, defeating the public notice function of patent claims"). As the Federal Circuit recognizes, a rule that ambiguous patent language is construed against the patent drafter and in favor of the public helps to preserve a patent's notice function.

Patent drafters are thus fully aware that if language in a patent is vague, it will be construed against the interests of the patentee-inventor. Moreover, this long-standing requirement for clarity in patent drafting comes not only from the courts, but directly from Congress. The Patent Statute itself (35 U.S.C. §§ 101 *et seq.*) demands clarity:

> § 112. Specification
>
> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such *full, clear, concise, and exact terms* as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> The specification shall conclude with one or more claims *particularly pointing out and distinctly claiming* the subject matter which the applicant regards as his invention.
>
> . . .
>
> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts *described in the specification* and equivalents thereof.

35 U.S.C. § 112, ¶¶ 1-2, 6 (emphasis added).

The Federal Circuit's "clearly excludes" disavowal standard thus represents a marked departure from the mainstream of U.S. patent law. Indeed, for the first time, the Federal Circuit is proposing to *reward* vagueness and *punish* clarity in patent drafting.

Specifically, the Federal Circuit held below that even when there is a disavowal of a prior technology (which was recognized here by the court; see App. 31), there will be no estoppel under the doctrine of equivalents as to a specific element *unless the accused infringer* can show that the element was "clearly" and "specifically" called out in the patent text for disavowal. There is no precedent, however, for the creation of such a "reverse presumption," nor did the court below provide any.

To be sure, settled law recognizes if a patentee-inventor *does* "clearly exclude" a specific element from the scope of the invention, there can be no question that such an element cannot be recaptured under the doctrine of equivalents. E.g., *Festo*, 535 U.S. at 740-741. It is here, however, that the Federal Circuit went astray. That is, just because an element that *has been* "clearly excluded" cannot be deemed to be an equivalent of a claimed limitation does not mean that an element *must be* "clearly excluded" in order for an estoppel to arise.

This Court addressed a somewhat similar misconception in *Warner-Jenkinson*, when it explained that "holding that certain reasons for a claim amendment may avoid the application of prosecution history estoppel is not

tantamount to holding that the *absence* of a reason for an amendment may similarly avoid such an estoppel." 520 U.S. at 33 (emphasis added). The Federal Circuit, however, has ignored that guidance with respect to disavowals in the specification and has adopted a rule that puts it squarely in conflict with this Court's precedent and with the Patent Statute.

The appropriate standard for evaluating the impact of disavowals contained in the patent specification should be one of *reasonableness* as viewed by those skilled in the art—not a demand for absolute clarity in the eyes of a reviewing court. Such a rule would be consistent with *Festo*, and it would uphold the notice function of the claims because patentee-inventors would be held to the reasonable inferences that naturally arise from the statements that they chose to include in their patents. Moreover, it would keep the proper focus on the understanding of those "person[s] skilled in the art" to whom the patent specification is supposed to be directed, see 35 U.S.C. § 112, ¶ 1, and would allow competitors to rely on the language of the patent when ordering their affairs. The patent community would thus be well served if this Court were to review this matter.

II. The Federal Circuit's Reverse Presumption Undermines The Certainty Our Patent System Provides

For a patent to aid in fulfilling the constitutional goal of "promot[ing] the Progress of Science and the useful

Arts," U.S. Const., art. I, § 8, cl. 8, those of ordinary skill in the relevant art must be able to determine from the public record the boundaries of the patent monopoly. As this Court has explained, "clarity is essential to promote progress, because it enables efficient investment in innovation."

> A patent holder should know what he owns, *and the public should know what he does not.* For this reason, the patent laws require inventors to describe their work in 'full, clear, concise, and exact terms,' as part of the delicate balance the law attempts to maintain between inventors, who rely on the promise of the law to bring the invention forth, and the public, which should be encouraged to pursue innovations, creations, and new ideas beyond the inventor's exclusive rights.

Festo, 535 U.S. at 731 (quoting 35 U.S.C. § 112, ¶ 1) (emphasis added); see also *General Elec. Co.* v. *Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938) ("the limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public"); accord 35 U.S.C. § 112, ¶ 2.

If a patentee-inventor is permitted to be vague in the patent specification as to whether an element of existing technology has been disavowed as an equivalent of a claimed element, it would result in the same uncertainties this Court sought to eliminate through *Markman*. Once again, issued patents would

be enveloped in "a 'zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims [and which] would discourage invention only a little less than unequivocal foreclosure of the field[.]'" See *Markman*, 517 U.S. at 390 (quoting *United Carbon Co.* v. *Binney & Smith Co.*, 317 U.S. 228, 236 (1942).

This case aptly demonstrates just how damaging it would be to embrace vagueness. As discussed above, those skilled in the automotive art *understood* that the "criticism and disavowal of [Berman] in the written description" of the Paice patent (App. 31) amounted to a disavowal of the Berman planetary gear train, and the record reflects that Toyota deliberately adopted the Berman gear train design—and rejected other designs—during development of the PRIUS®. To permit a court to rule later that the disavowal was somehow not "clear enough" (despite what those skilled in the art may have thought) and that, as a consequence, the patent laws will now bar the use of technology that those skilled in the art previously would have regarded as having been dedicated to the public would work a manifest injustice and could imperil important products.

As this Court explained in *Warner-Jenkinson*, "the doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice function of the statutory claiming requirement." 520 U.S. at 29. Thus, when the public record provides reasonable notice to those skilled in the art that certain prior art technology is not regarded by the

patentee-inventor to be the equivalent of a claimed element, that notice must be respected. To hold otherwise would hinder future investment in new products and unfairly injure competitors who relied during product development on the reasonable notice the patent provided as to the scope of equivalents.

The Federal Circuit's heightened "clearly excludes" standard, however, undermines certainty by penalizing clarity. No longer can those in industry be sure what is or is not an "equivalent" of a claimed element just by reading the patent and its prosecution history. Indeed, even if those skilled in the art are reasonably sure that a particular element has been disavowed (as is the case here), they still cannot be certain because the Federal Circuit's reverse presumption creates an inference of no estoppel unless it is clear to the court that a specific subject matter has been disclaimed—a determination that can only be made many years after the patent has issued, and long after those in the industry must have decided whether to incorporate a particular element into their products.

In determining which presumptions arise from the actions and statements of a patentee-inventor, this Court has referred to the "delicate balance the law attempts to maintain between inventors, who rely on the promise of the law to bring the invention forth, and the public, which should be encouraged to pursue innovations, creations, and new ideas beyond the inventor's exclusive rights." *Festo*, 535 U.S. at 731. By holding that new presumptive benefits flow to patent

drafters based on ambiguous statements that those who possessed the power of the pen could have clarified if they so chose, the Federal Circuit has upset that balance and interjected needless uncertainty into our patent system. This Court's intervention is necessary to restore it.

CONCLUSION

For the reasons stated above, the petition for a writ of certiorari should be granted.

Respectfully submitted,

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APPENDIX A

United States Court of Appeals for the Federal Circuit

2006-1610, -1631

PAICE LLC,

Plaintiff-Cross Appellant,

v.

TOYOTA MOTOR CORPORATION, TOYOTA MOTOR NORTH AMERICA, INC., and TOYOTA MOTOR SALES, U.S.A., INC.,

Defendants-Appellants.

Ruffin B. Cordell, Fish & Richardson P.C., of Washington, DC, argued for plaintiff-cross appellant. With him on the brief were Ahmed J. Davis and Scott A. Elengold. Of counsel on the brief was Robert E. Hillman, of Boston, Massachusetts.

George E. Badenoch, Kenyon & Kenyon, of New York, NY, argued for defendants-appellants. With him on the brief were John Flock and Thomas R. Makin. Of counsel on the brief was T. Cy Walker, of Washington, DC.

Appealed from: United States District Court for the Eastern District of Texas

Judge David J. Folsom

DECIDED: October 18, 2007

Before LOURI, RADER, and PROST, Circuit Judges.

Opinion for the court filed by Circuit Judge PROST. Opinion concurring in the result filed by Circuit Judge RADER.

PROST, Circuit Judge.

Defendants Toyota Motor Corporation, Toyota Motor North America, Inc., and Toyota Motor Sales, U.S.A., Inc. (collectively, "Toyota") appeal a judgment by the United States District Court for the Eastern District of Texas that Toyota infringed claims 11 and 39 of U.S. Patent No. 5,343,970 ("the '970 patent") owned by Paice LLC ("Paice") under the doctrine of equivalents. *Paice LLC v. Toyota Motors Corp.*, No. 2:04-CV-211 (E.D. Tex. Aug. 16, 2006). Paice cross-appeals the district court's judgment that Toyota did not literally infringe claims 11 and 39 of the '970 patent, claim 15 of the U.S. Patent No. 6,209,672 ("the '672 patent"), and claims 1 and 2 of U.S. Patent No. 6,554,088 ("the '088 patent").[1] Paice also appeals the district court's imposition of an ongoing royalty arrangement that allows Toyota to continue practicing the invention of the '970 patent in exchange for a set royalty payment. For the reasons explained below,

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[1] The '088 patent is a continuation in part of the '672 patent. In the proceedings below, the parties treated the disclosures of the '672 patent and the '088 patents as being the same. Appellants' Br. 15. Thus, for the sake of simplicity, we will refer primarily to the relevant portions of the '672 patent and omit any parallel citations to the '088 patent.

we affirm-in-part, vacate-in-part, and remand for further proceedings.

I. BACKGROUND

A. Patents in Suit

The three patents at issue in this case relate to drive trains for hybrid electric vehicles. In a conventional automobile, the wheels are driven using torque (rotational force) supplied only by an internal combustion engine ("ICE" or "engine"). In hybrid electric vehicles, on the other hand, the wheels are driven using torque supplied by an ICE, an electric motor, or a combination of the two. This adds an additional layer of complexity because the relative torque contributions of the ICE and the electric motor must be combined and controlled.

To that end, the drive train disclosed in the '970 patent employs a microprocessor and a controllable torque transfer unit ("CTTU") that accepts torque input from both the ICE and the electric motor:

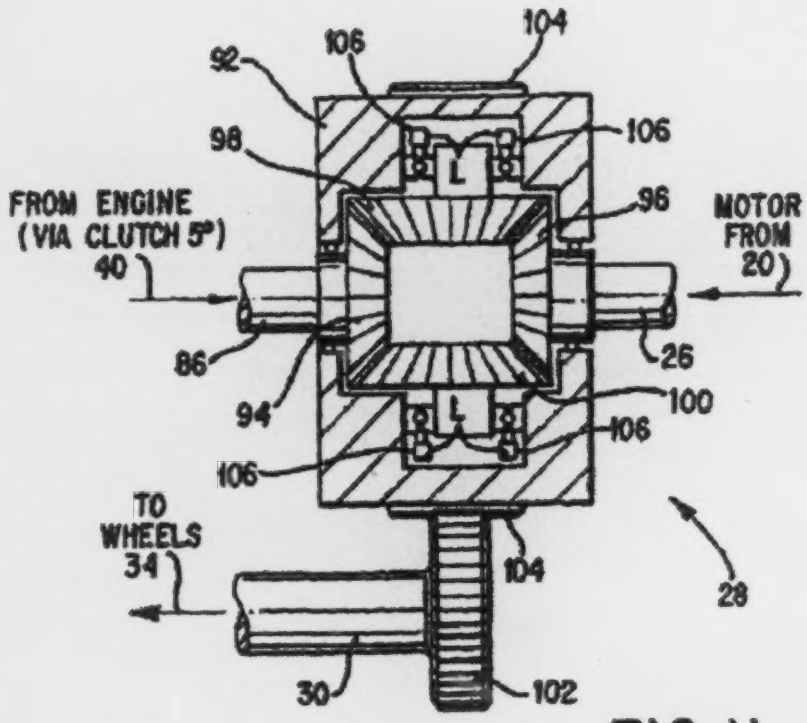


FIG. 11

As shown in figure 11 of the '970 patent, illustrated above, the ICE output shaft 86 and the electric motor output shaft 26 extend into the CTTU housing 92 and terminate at bevel gears 94 and 96, respectively, each of which mesh with two other bevel gears, 98 and 100.

In this embodiment, bevel gears 98 and 100 are equipped with microprocessor-controlled locking devices 106 for setting the gears' rotational freedom, if any, relative to the housing. '970 patent, col. 15, ll. 50-53. In one mode of operation the microprocessor locks the bevel gears, causing the housing and the drive shaft 30 to rotate about their horizontal axes in

response to any torque provided by the output shafts of the ICE or electric motor (or both). *Id.* at col. 15, l. 64 – col. 16, l. 3. In this "locked" mode of operation, the two shafts rotate at the same speed, although the amount of torque provided by the individual shafts may differ. *See id.* The CTTU's microprocessor, by virtue of its ability to control the amount of torque provided at each shaft, is able to control the relative amounts of torque transferred from the ICE and the electric motor to the drive shaft. *See id.* at col. 10, ll. 4-43. The microprocessor is able to do so by holding the inputs constant and merely sending control signals to the locking devices. For example, if the ICE is disengaged (and not providing any torque) while the bevel gears are locked, there is a one-to-one transfer of torque from the electric motor output shaft, through the CTTU, to the drive shaft. J.A. 1494. In another mode of operation ("differential mode"), however, the microprocessor releases the bevel gears such that they are free to rotate. '970 patent, col. 16, ll. 11-27. If the ICE is disengaged in this mode, there is a one-to-two transfer of torque from the motor output shaft, through the CTTU, to the drive shaft. J.A. 1494.

Claims 11 and 39 of the '970 patent are relevant to this appeal. Because claim 39 depends from claim 32, and because the issues we must decide do not implicate the additional limitation of claim 39, only claims 11 and 32 are reproduced below:

11. A hybrid electric vehicle, comprising:

two or more drive wheels receiving torque for propelling said vehicle from an output shaft, and a power unit supplying drive torque to said output shaft, said power unit comprising:

a *controllable torque transfer unit* adapted to receive torque from two sources and transfer said torque to said output shaft;

an engine adapted to consume combustible fuel and supply torque to said torque transfer unit;

an AC electric motor adapted to receive electric energy from a battery and supply torque to said torque transfer unit, said motor being further adapted to be operable as a generator;

a battery for supply of stored electric energy to said motor, and for receiving and storing electric energy from said motor when operated as a generator;

solid state switching means for converting DC supplied by said battery to AC for supply to said electric motor, and for rectifying AC generated by said motor when operated in a regenerative mode to provide DC to charge said battery; and

a controller for controlling the operation of said engine, said electric motor, said solid state switching means, and said torque transfer unit, such that said torque transfer

unit receives torque from either or both of said internal combustion engine and said electric motor and transmits torque therefrom to said drive wheels by way of said output shaft, and for controlling the relative contributions of the internal combustion engine and electric motor to the torque driving the wheels.

'970 patent, col. 23, ll 36-68 (emphasis added).

32. A hybrid electric vehicle, comprising:

a *controllable torque transfer unit,* operable to transfer torque in three modes: (a) from either or both of two input shafts to an output member, said output member transmitting torque to drive wheels of said vehicle; (b) between said input shafts; and (c) from said output member to one or both of said input shafts;

an electric motor adapted to apply torque to a first of said input shafts responsive to supplied electrical energy, said motor further being operable in a generator mode, to provide electrical energy when driven by torque transferred thereto via said first input shaft;

a combustible-fuel-burning internal combustion engine adapted to apply torque to a second of said input shafts;

a battery adapted to supply electrical energy to and store energy received from said electric motor; and

a controller adapted to receive input commands from a driver of said vehicle to monitor operation of said vehicle and to control operation of said controllable torque transfer unit, said motor, and said internal combustion engine, wherein said controller comprises means for performing the following functions responsive to input commands and monitored operation of said vehicle:

selecting an appropriate mode of operation of said vehicle from at least the following possible modes of operation:

low speed running;
steady state running;
acceleration or hill climbing;
battery charging;
braking; and
engine starting;

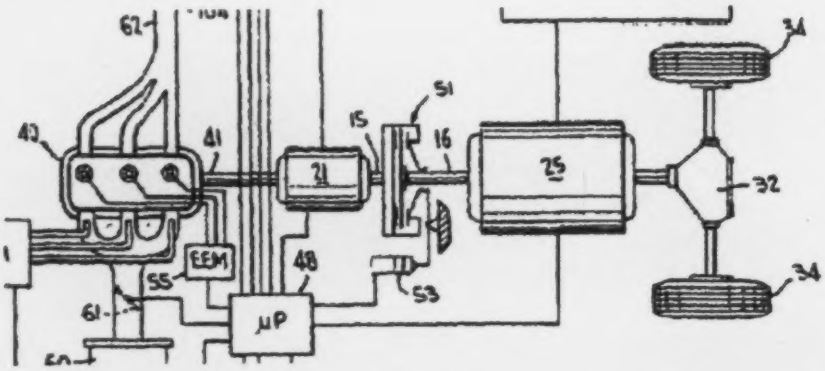
selecting the appropriate flow paths of electrical energy and/or combustible fuel and of torque to effectuate the selected mode of operation; and

controlling operation of said controllable torque transfer unit, said electric motor and said internal combustion engine in accordance with said selected appropriate flow paths and selected mode of operation.

Id. at col. 26, l. 39 – col. 27, l. 15 (emphasis added).

The drive train of the '672 and '088 patents differs from the drive train of the '970 patent in that it employs a clutch – rather than a CTTU – to combine

the torque contributions from the ICE and the electric motor. As illustrated in figure 3 of the '672 patent (illustrated below), torque from electric motor 25 is directly transferred to differential 32 (and therefore to the wheels 34). Torque from ICE 40, on the other hand, is only indirectly transferred to the wheels because output shaft 41 of the ICE is routed through clutch 51.



Consequently, when the clutch is disengaged, the electric motor is the sole source of torque transferred to the wheels. When the clutch is engaged, however, torque provided by both the ICE and the electric motor is transferred to the wheels. Another difference from the drive train of the '970 patent is that the drive train of the '672 and '088 patents use "road load" to determine the proper combination of torque from the ICE and the electric motor.[2]

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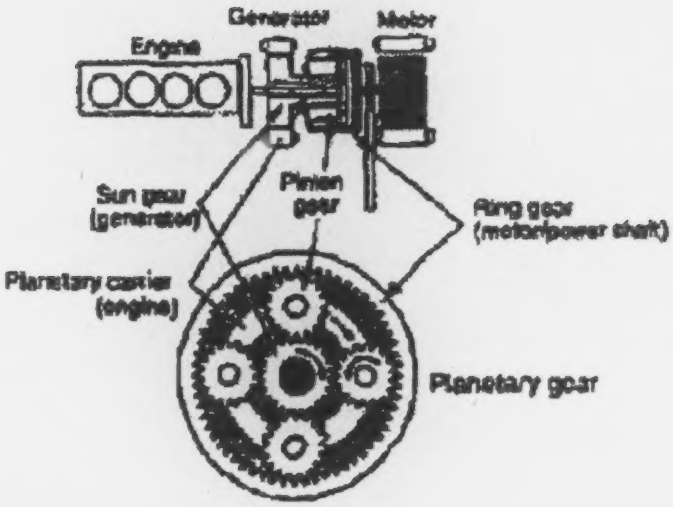
[2] Road load, expressed as a percentage of the ICE's maximum torque output, is simply the amount of torque required to propel the vehicle at any give time.

B. Accused Devices

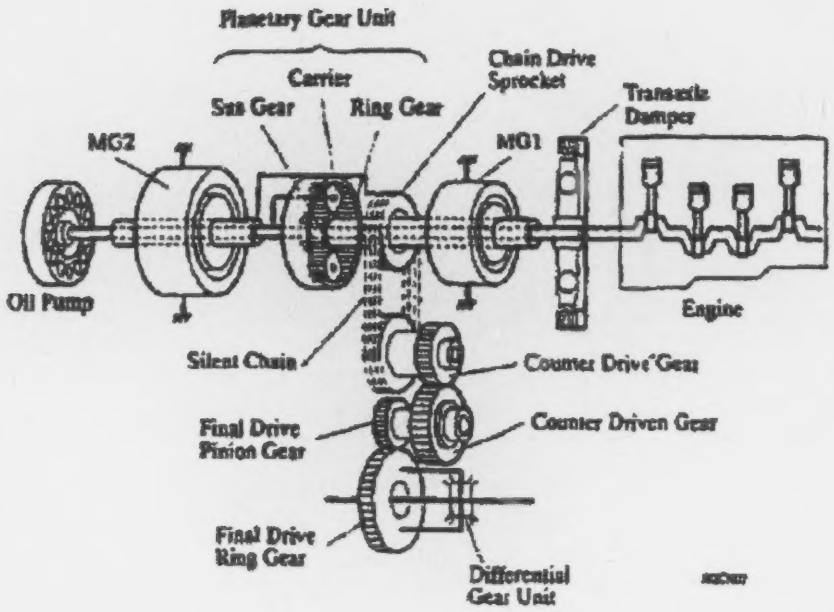
At issue in this appeal are hybrid electric vehicles sold by Toyota. Toyota's first commercial hybrid electric vehicle, the "Prius I," was sold in Japan beginning in 1997 and in the United States beginning in 2000. In 2003, Toyota began marketing a newer-model, the "Prius II." The drive train (or "transaxle unit") of the Prius II – which is also present in another form in the Toyota Highlander and Lexus RX 400h[3] – is similar to the drive trains described in all three patents in suit in the sense that it, too, combines torque from an ICE with torque from an electric motor ("MG2" or "the traction motor"). However, instead of combining these torques using the '970 patent' s lockable bevel gears or the '672 and '088 patents' clutch, Toyota's drive train is designed around a "planetary gear unit" (or "power-splitting device"), having a central "sun" gear that meshes with several "planetary" gears (supported by a "planetary carrier"), which in turn mesh with a peripheral ring gear:

[3] The drive trains of the Toyota Highlander and the Lexus RX 400h do differ somewhat from the drive train of the Prius II. However, those differences are not relevant to the issues on appeal.



J.A. 4629.

As may be appreciated from the following depiction of Toyota's drive train, the output shaft from the ICE is connected to the planetary carrier (and thus to the planetary gears), whereas the output shaft from MG2 is connected to the ring gear. The Toyota design also employs an additional motor/generator ("MG1") having an output shaft connected to the sun gear.



J.A. 12788.

As with the microprocessor in the '970 drive train, a microprocessor associated with Toyota's drive train is able to control the amount of torque provided by both the ICE and MG2. J.A. 1577. Unlike the transfer of torque through the CTTU described in the '970 patent, however, the transfer of torque through Toyota's planetary gear unit cannot be varied; 72% of the torque provided by the ICE to the planetary carrier is always transferred to the ring gear.[4] J.A. 1497. That fraction of the ICE torque is then combined with 100% of the torque provided by MG2. J.A. 1505. As such, Toyota's microprocessor is only able to vary the amount of torque output to the drive shaft

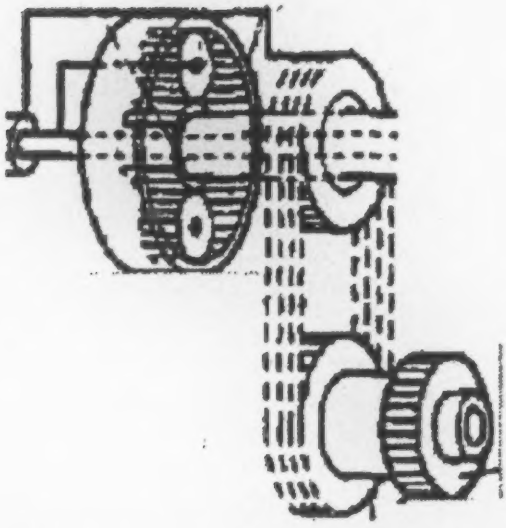
[4] The remaining 28% is always transferred to the sun gear.

by varying the ICE and/or MG2 torque inputs; holding those inputs constant results in a constant torque output. J.A. 1577.

II. DISTRICT COURT PROCEEDINGS

Paice initiated the instant action against Toyota on June 8, 2004, by filing a complaint in the United States District Court for the Eastern District of Texas alleging three counts of infringement – one count for each patent in suit – and requesting, inter alia, compensatory damages and a permanent injunction. On September 28, 2005, the district court issued a written opinion construing dozens of disputed claim terms. *Paice LLC v. Toyota Motors Corp.*, No. 2:04-CV-211 (E.D. Tex. Sept. 28, 2005) ("*Claim Construction Opinion*"). Of primary importance to the issues on appeal is the court's construction of "controllable torque transfer unit" (the CTTU limitation) as "a multi-input device or component that is controlled to transfer variable amounts of torque." *Id.* slip op. at 17.

On December 6, 2005, the district court commenced a ten-day jury trial during which both sides presented extensive evidence. Paice's theory of the case, put before the jury largely through the expert testimony of Dr. Steven Nichols, was that the planetary gear unit, the chain/sprocket arrangement, and the shaft leading to the counter drive gear of Toyota's drive train satisfies the CTTU limitation.



See J.A. 1256,[5] 12788. In particular, Dr. Nichols stated that the structure is (1) "a multi-input device or component" – it accepts inputs at the planetary carrier from the ICE output shaft and at the ring gear from the MG2 output shaft; (2) "that is controlled to transfer variable amounts of torque" – the microprocessor dictates the amount of torque sent from each input, and ultimately output to the drive shaft. *See, e.g.*, J.A. 1201-03.

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[5] Q. [By Mr. Badenoch on cross] So, what you call the controllable torque transfer unit are these components, that planetary, and in effect it's the drive sprocket on that shaft going down to the other gear on the end of the drive sprocket, that's the controllable torque transfer unit in Toyota?

A. [By Dr. Nichols] Yes.

J.A. 1256.

Toyota offered its own theory to the jury, largely through the expert testimony of Dr. Edward Caulfield. According to Dr. Caulfield, Toyota's planetary gear unit only accepts torque input from the ICE. Seventy-two percent of that input torque is then output to the ring gear. The combination of the fractional (72%) ICE torque with the torque from MG2 does not occur until after the fractional ICE torque is output from the planetary gear unit to the ring gear. Therefore, Dr. Caulfield's opinion was that Toyota's drive train does not satisfy the district court's construction because there is no single "device or component" that can be characterized as "multi-input." *See* J.A. 1497-98.[6] Dr. Caulfield further testified that Toyota's drive

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[6] Q. [By Mr. Badenoch on direct] When you say . . . summing at the ring and not across the physical device, what do you mean by that?

A [By Dr. Caulfield] I would look at the ring as *not a device,* it's a part. A ring can be compared to a shaft. There's no difference between this shaft here, if we made it a foot long either way of exactly where it hits that particular planetary output. The results would be the same.

So, Mr. Cordell [through the testimony of Dr. Nichols], . . . is making his sum point where the two roads come together on literally the ring, which is a shaft. So, he's summing into a physical part.

Now, no two ways about it. The planetary is a device. That green model [of the planetary gear unit] I have there is a device. In engineering you would call it a machine. It does basically split the torque. A torque coming into the carrier is sent out through the sun and then out through the ring. There's splitting going on there. But that's a device where he's trying to sum is on a physical part, just a solid member.

(Continued on following page)

train does not satisfy the CTTU limitation because the flow of torque through the planetary gear unit cannot be altered from the 72/28 split discussed above, and therefore, cannot be "controlled to transfer variable amounts of torque." J.A. 1505-06.

At the end of the evidentiary presentation, the case was submitted to the jury. The jury concluded that Toyota's drive train lacks a literal CTTU, but infringes claims 11 and 39 of the '970 patent under the doctrine of equivalents, *see* J.A. 4394; the jury found no infringement of the other asserted claims. Based on those findings, the jury awarded $4,269,950.00 to Paice as a reasonable royalty.

On January 20, 2006, Toyota filed a motion for judgment as a matter of law ("JMOL") seeking to overturn the jury's limited finding of infringement. Paice filed its own motion for JMOL, seeking to overturn the jury's finding of no literal infringement with respect to claims 11 and 39 of the '970 patent, claim 15 of the '672 patent, and claims 1 and 2 of the '088 patent. The court denied both motions.

Paice also moved for a permanent injunction to prevent Toyota from making, using, offering for sale, and selling within the United States the accused

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. . . .

> It's very similar if I were to take two motors, tie them with two chains to the same shaft. That's – the shaft is doing the summing, *not the device.*

J.A. 1497-98 (emphases added).

vehicles. In addressing that motion, the district court followed the traditional four-factor test mandated by the Supreme Court's recent decision in *eBay Inc. v. MercExchange, L.L.C.*, 126 S.Ct. 1837, 1839 (2006) ("A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction."). With respect to irreparable injury, Paice argued that the absence of an injunction would have an adverse effect on its ability to license the patented technology. The court rejected this argument, however, noting that Paice had only adduced vague testimony that the company was "sidelined" in its business dealings during litigation. *Paice LLC v. Toyota Motors Corp.*, No. 2:04-CV-211, Docket No. 227, slip op. at 8 (E.D. Tex. Aug. 16, 2006). The court also pointed to evidence in the record suggesting that Paice's inability to reach an agreement with Chrysler, for example, was due to public misrepresentations Paice allegedly made about its relationship with Chrysler, and was not due to the absence of an injunction. *Id.* Moreover, since Paice does not actually manufacture any goods, the court concluded that there was no threat that Paice would lose name recognition or market share without an injunction. *Id.* slip op. at 9.

Intertwined with its consideration of irreparable injury was the court's analysis of the adequacy of monetary damages. Given the relatively small reasonable royalty awarded by the jury – which amounted to approximately $25 per accused vehicle – in comparison to the overall value of the vehicles, the court concluded that monetary damages would suffice. *Id.* The adequacy of monetary damages was further bolstered, in the court's opinion, by the fact that Paice had offered a license to Toyota during the post-trial period. *Id.* slip op. at 9-10.

With regard to the balance of hardships, Paice contended that it "faces extinction" without an injunction, whereas Toyota would suffer "only minor economic losses." This contention was rejected by the court because, in its view, an injunction against Toyota (1) would disrupt "related business, such as dealers and suppliers;" (2) could have an adverse effect on the "burgeoning hybrid market;" and (3) might damage Toyota's reputation. *Id.* slip op. at 10. The court further concluded that Paice's "extinction" argument was unsound because it was based on the rejected premise that "only injunctive relief [of the type requested] will lead to a successful licensing program." Consequently, the court held that the balance of hardships favored Toyota. *Id.* Lastly, the court determined that the public interest favored neither party. *Id.* Accordingly, the court denied Paice's motion for a permanent injunction. *Id.* slip op. at 11. However, rather than leaving the parties to their own devices with respect to any future acts of infringement,

the court imposed an "ongoing royalty" of $25 per Prius II, Toyota Highlander, or Lexus RX400h vehicle sold by Toyota during the remaining life of the patent and entered final judgment. *Paice LLC v. Toyota Motors Corp.*, No. 2:04-CV211, Docket No. 228, slip op. at 2 (E.D. Tex. Aug. 16, 2006).

Toyota appeals the denial of its JMOL motion, and Paice cross-appeals both the denial of its JMOL motion, as well as the "ongoing royalty" imposed by the district court.[7] We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

III. STANDARD OF REVIEW

Federal Rule of Civil Procedure 50(a)(1) provides that a court may grant a motion for JMOL only where "there is no legally sufficient evidentiary basis for a reasonable jury to find for [the non-movant]." "We review the district court's denial of a motion for JMOL without deference, applying the same standard employed by the district court." *Honeywell, Int'l Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1139 (Fed. Cir. 2004) (en banc). "Under this standard, we can reverse a denial of a motion for JMOL only if the jury's factual findings are not supported by substantial evidence or if the legal conclusions implied from the jury's verdict cannot in law be supported by those

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[7] The district court's refusal to enjoin Toyota altogether is not raised in Paice's cross appeal. Appellee's Br. 62 n. 3.

findings." *Cybor Corp. v. FAS Techs.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc).

"The decision to grant or deny permanent injunctive relief is an act of equitable discretion by the district court, reviewable on appeal for abuse of discretion." *eBay*, 126 S.Ct. at 1839.

IV. DISCUSSION

A. Toyota's Appeal

We first address the issues raised in Toyota's appeal of the district court's denial of the motion for JMOL of noninfringement of claims 11 and 39 of the '970 patent. According to Toyota, the jury's finding of infringement of those claims under the doctrine of equivalents must be overturned for three reasons. We disagree.

1. Sufficiency of the Evidence

First, Toyota argues that the expert testimony of Dr. Nichols was legally insufficient to support a finding of infringement under the doctrine of equivalents. Although Dr. Nichols testified before the jury for a day and a half, Toyota claims that the vast majority of his testimony was directed to literal infringement. Specifically, Toyota argues that Dr. Nichols explicitly marked the end of his extensive literal infringement testimony by answering in the affirmative when asked whether "[t]he opinion that [he had] expressed thus far . . . relate[d] to literal

infringement." J.A. 1218. Immediately thereafter, Toyota contends, Dr. Nichols explicitly transitioned to his equivalence testimony by again answering in the affirmative when asked whether he had "also formed an opinion with respect to the Doctrine of Equivalents." *Id.*

Following his answer to that question, the following brief exchange took place before the jury between counsel for Paice and Dr. Nichols:

> Q. So, assuming that the controllable torque transfer unit is not literally infringed, have you found that . . . the accused vehicles satisfy this limitation under the doctrine of equivalents?
>
> A. Yes. It is my opinion that they do.
>
> Q. [C]ould you describe that for us by reference to the slide that we see on the screen, Slide 71?
>
> A. Well, this particular slide is the Doctrine of Equivalents analysis for the controllable torque transfer unit. I will say that I do believe that it is literally there. However, it provides the function that is to be provided. It provides controllable and variable amounts of torque from two sources to the drive wheels, and I believe that's consistent with the claim construction of the Court.
>
> The way in which it does that is it controls a set of gears to receive torque from two input shafts and transfer torque to the drive wheels.

> Q. And what's the result?
>
> A. The results are control – that the vehicles control to direct torque flow between the motor, the engine and the drive. . . .

Id. The "Slide 71" referenced by counsel for Paice contained a grid with three rows, with one row corresponding the function of the CTTU, one row corresponding to the way in which the CTTU performed that function, and one row corresponding to the result the CTTU achieved; and two columns, one corresponding to the '970 patent and the other corresponding to the "Accused Toyota Vehicles." In each of the grid's six boxes, a red check mark indicated the presence of the function/way/result in both the CTTU and the "Accused Toyota Vehicles." This, Toyota says, was the extent of Dr. Nichols's testimony on the subject.

We have stated that "a patentee must . . . provide *particularized testimony and linking argument* . . . with respect to the function, way, result test when such evidence is presented to support a finding of infringement under the doctrine of equivalents." *Tex. Inst. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1567 (Fed. Cir. 1996) (emphasis added). "Generalized testimony as to the overall similarity between the claims and the accused infringer's product or process will not suffice." *Id.* Under this standard, Dr. Nichols's testimony was plainly sufficient. A careful review of the entire transcript from that portion of the trial evinces that the bulk of Dr. Nichols's testimony was

not limited to literal infringement. While it is true that the excerpts pointed to by Toyota ostensibly draw a figurative line in the sand separating testimony concerning literal infringement from that concerning equivalence, we do not read Dr. Nichols's testimony to say that every word he uttered from the time he took the stand until the moment he transitioned to the doctrine of equivalents related only to literal infringement. Rather, Dr. Nichols gave a substantial amount of testimony – occupying over seventy pages of transcript – concerning the technology disclosed in the patents and the inner workings of the accused vehicles' transaxle units before he even discussed the topic of infringement at all:

> Q. Now, Dr. Nichols, now that we've discussed some of the components in the patents, could we turn to your infringement analysis.[8]
>
> A. Yes.

J.A. 1212. It was with his answer to this question that Dr. Nichols indicated to the jury that his infringement testimony was officially beginning. And it was to this starting point that Dr. Nichols was referring a short time later when he answered in the affirmative to the question, "[t]he opinion that you've

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[8] Although counsel for Paice arguably characterized the testimony to that point as relating only to "some of the components in the patents," Dr. Nichols had by that time extensively discussed the accused transaxle units.

expressed thus far, does that relate to literal infringement?" J.A. 1218.

Another infirmity in Toyota's argument is that, even if we were to agree that Dr. Nichols did in fact draw some sort of line in the sand with his answer to that question, in so doing he did not thereby render his literal infringement analysis irrelevant to his subsequent equivalence analysis. Our "particularized testimony" standard does not require Dr. Nichols to re-start his testimony at square one when transitioning to a doctrine of equivalents analysis. Indeed, we think it desirable for a witness to incorporate earlier testimony in order to avoid duplication. The fact that Dr. Nichols did not explicitly do so does not mean he did not implicitly incorporate his earlier testimony. Thus, we reject any notion that Dr. Nichols's equivalence testimony is strictly limited to the few lines pointed to by Toyota.

Toyota also argues that Dr. Nichols's other testimony cannot be used to support the jury's verdict due to the absence of any "linking argument" to tie such testimony to the function/way/result analysis of the CTTU. Again, we find Toyota's characterization of Dr. Nichols's testimony inaccurate. For example, on the morning of December 8, 2005, and before he turned to his literal infringement analysis, Dr. Nichols demonstrated the operation of an actual accused vehicle's transaxle unit to the jury, and in so doing he explained:

> Q. Okay. And when you say its input, what is it that you're talking about as being input, Dr. Nichols?
>
> A. We have *torque input from the engine, torque input from MG2,* combined torque output to the drive wheels, *controllably combined* to give you *variable torque on the output to drive the wheels.*

J.A. 1201 (emphases added). Later that same morning, referring to Slide 71, Dr. Nichols explained to the jury that the accused vehicles' transaxle units "provide [] the function that is to be provided," i.e., "*controllable* and *variable* amounts of *torque from two sources* to the drive wheels." J.A. 1218 (emphases added). Thus, within a close proximity of time, Dr. Nichols first demonstrated and explained operation of an actual accused device to the jury, and then linked that demonstration and explanation to the function of the CTTU. Our review of the record reveals that Dr. Nichols's testimony was similarly sufficient with respect to linking the way and result prongs.

Nonetheless, Toyota criticizes Dr. Nichols for allegedly failing to identify any specific structure in the accused vehicles' transaxle units corresponding to the CTTU. In particular, Toyota claims that Paice's equivalence argument is supported by nothing more than Dr. Nichols's "[g]eneralized testimony as to the overall similarity between the claims and the accused infringer's product." *See* Appellants' Br. 37-38 (quoting *Tex. Inst.*, 90 F.3d at 1567). This argument is specious in light of the fact that *counsel for Toyota*

spent a substantial portion of his time on cross examination asking Dr. Nichols to help draw a box on a diagram around the exact portion of Toyota's drive train he identified as corresponding to the CTTU. *See* J.A. 1256. To now suggest on appeal that the jury was never shown specific structure is simply incorrect. *Compare* Appellants' Br. 38 ("Indeed, Dr. Nichols was never asked at trial to identify any alleged equivalent structure in connection with his equivalents analysis."), *with* J.A. 1256 (Questions by Mr. Badenoch: "Exactly what portion – what device in this diagram of the Toyota Prius transaxle schematic, what are you [Dr. Nichols] calling now the controllable torque transfer unit in your opinion?" and "Can you [Dr. Nichols] just go over that one more time so that I can draw a box to make sure I've got it right?").

Toyota also argues that Dr. Nichols "fail[ed] to acknowledge any differences between the CTTU claim limitation and any component or components alleged to be equivalent" in order to "explain why and how such differences are insubstantial." Appellants' Br. 41. We are unaware of any such "acknowledgement" requirement in the context of the function/way/result test, and Toyota does not cite any case law standing therefor. In any case, Dr. Nichols was called as a rebuttal witness to answer Dr. Caulfield's testimony. With respect to the question of whether Toyota's accused CTTU is "multi-input device or component," Dr. Nichols testified:

Q. Now, Dr. Nichols, did you also hear Dr. Caulfield testify yesterday about where the torque from MG2, I'll say intersects the ring gear and where is it, in your understanding, that Dr. Caulfield said that takes place?

. . . .

A. If I understand him correctly, he takes the position that – well, actually this plus this plus other elements are all one shaft and as a result it is not an input; it's sort of an input/output flowby and there is no input shaft in MG2. If I understand his testimony.

Q. Do you agree with this testimony, Dr. Nichols?

A. Well, it's certainly a novel approach.

Q. And what is it you mean by a novel approach?

A. It's not true.

Q. So, you do not agree with it?

A. No. . . . This is a ring gear. Without this, the planetary gear unit does not exist. It's not a ring gear shaft, a shaft ring gear. It's a ring gear.

Q. Thank you.

A. I will add one other thing. If, in fact, it does flow on the outside somehow, which it does not, this is not a dumb device. This would be a very smart device that somehow would have torque flow around the outside of

> a ring gear which is not a ring gear but a shaft. It simply does not make sense to me.

Trial Tr. 141:18-143:4, December 16, 2005.

And with respect to the question of whether Toyota's accused CTTU is "controlled to transfer variable amounts of torque," Dr. Nichols testified:

> Q. We heard a lot of testimony about the 72 percent/28 percent torque split within the planetary gear unit. I just want to confirm it. Do you agree or disagree that the torque split always occurs in the planetary gear unit?
>
> A. Yes. It's steady state, that's the torque split and it's been consistent on four or five or six people giving testimony. We all agree on that split of steady state.
>
> . . . .
>
> Q. And yet you still have reached the conclusion that you've reached, Dr. Nichols, regarding whether the planetary gear unit in the Toyota accused vehicles is a controllable torque transfer unit?
>
> A. Yes.
>
> Q. And how have you reached that in light of the fact that there is a fixed split within the ring gear itself?
>
> A. Well, . . . I believe everyone that's given testimony has agreed that it – the [MG2] can provide power independently through the . . . planetary gear unit, although there may be

> some arguments whether it's through or somehow around the planetary gear unit. Everyone's agreed, and the engine can provide it and then provide it in different combinations.

Trial Tr. 145:13-146:18, Dec. 16, 2005.

This rebuttal testimony, in conjunction with the testimony given during each side's case in chief, provided the jury with an ample basis upon which to evaluate the insubstantiality of the differences between the CTTU limitation and the accused structure.

2. Criticism of Prior Art

The second reason Toyota contends that the jury's equivalence verdict cannot stand relates to Paice's criticism of two patents issued to Berman et al. and assigned to TRW, Inc.: U.S. Patent Nos. 3,566,717 ("the '717 patent") and 3,732,751 ("the '751 patent") (collectively, "Berman/TRW").[9] Both Berman/TRW patents describe a hybrid drive train similar to those in the accused vehicles in that the Berman/TRW drive train design employs an ICE, a traction motor, and a generator coupled to a planetary gear unit. *See* '751

[9] The '751 patent is a continuation in part of the '717 patent. Aside from the addition of a few alternate embodiments in the '751 patent, *see* col. 17, ll. 10-52 (discussing embodiments not relevant here), the written descriptions of these two patents appear more-or-less identical. For simplicity, when we refer to the shared written description, we cite only to the '751 patent.

patent, col. 2, l. 48 – col. 3, l. 9. However, unlike Toyota's drive train, the Berman/TRW drive train has two *operator-selectable* modes of operation, one being designed for lower speeds and the other being designed for higher speeds. *See, e.g., id.* at col. 4, ll 48-62. Although the Berman/TRW design employs various controllers containing transistors and other electronic circuitry, *see id.* at figs. 4-5, there is no controlling microprocessor choosing the most appropriate mode of operation. J.A. 1255.

The written description of the '970 patent describes the Berman/TRW design as providing "[a] more promising 'parallel hybrid' approach" than other prior art, '970 patent, col. 2, l. 67 – col. 3, l. 1, but it nevertheless points to disadvantages of the Berman/TRW design compared to the '970 invention:

> The present invention relates to such a parallel hybrid vehicle, but addresses certain substantial deficiencies of the Berman et al design. For example, Berman et al show two separate electric motor/generators powered by the internal combustion engine to charge batteries and to drive the vehicle forward in traffic. This arrangement is a source of additional complexity, cost and difficulty, as *two separate modes of engine control are required, and the operator must control the transition between the several modes of operation.* Further the gear train shown by

> Berman et al *appears to be quite complex and difficult to manufacture economically.*[10]

Id. at col. 3, ll 16-27 (emphases added). Given this criticism and disavowal of Berman/TRW in the written description, Toyota argues that its drive trains – which are allegedly "based on the configuration of the prior art Berman/TRW patents" – cannot be captured by Paice's invocation of the doctrine of equivalents.

This court has addressed the effects of criticism and disavowal in several cases. For example, in *SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.*, the technology at issue related to "[b]alloon dilatation catheters . . . used in coronary angioplasty procedures to remove restrictions in coronary arteries." 242 F.3d 1337, 1339 (Fed. Cir. 2001). Such catheters were made in one of two configurations: "the dual (or adjacent) lumen configuration," or "the coaxial lumen configuration." *Id.* The question on appeal was whether the claims – which merely specified that the two lumens be "separate" – were limited in scope, either literally or under the doctrine of equivalents, to the coaxial lumen configuration. Analyzing the claim language in light of the written description, we held, inter alia, that the patentee had "distinguish[ed] the prior art on the basis of the use of dual lumens and [had] point[ed]

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[10] The '970 patent also distinguishes Berman/TRW on the basis that "one or even two variable-speed transmissions may be required." '970 patent, col. 3, ll. 28-30. Toyota does not point to that distinction as relevant to this appeal. *See* Appellants' Br. 51.

out the advantages of the coaxial lumens used in the catheters that [were] the subjects of the [patents in suit]." *Id.* at 1343. We read this as "support[ing]" the "conclusion that the claims should not be read so broadly as to encompass the distinguished prior art structure." *Id.* We further explained that the "most compelling portion of the specification" was the patentee's statement that the coaxial configuration "is 'the basic sleeve structure for all embodiments of the present invention contemplated and disclosed herein.'" *Id.* at 1344 (quoting the written description). We were thus led "to the inescapable conclusion" that the "separate" limitation was literally limited in scope to the coaxial configuration. *Id.* at 1342.

Relying again on the patentee's criticism of the prior art and the "all embodiments" statement, we arrived at the same conclusion with respect to equivalent claim scope. However, our analysis turned on a narrower rationale:

> The principle articulated in [several cited] cases is akin to the familiar rule that the doctrine of equivalents cannot be employed in a manner that wholly vitiates a claim limitation. *See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, [520 U.S. 17, 29-30 (1997)]; *Athletic Alternatives, [Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1582 (Fed. Cir. 1996)] ("specific exclusion" principle is "a corollary to the 'all limitations' rule"). Thus, if a patent states that the claimed device must be "non-metallic," the patentee cannot assert the patent against a metallic device on the

> ground that a metallic device is equivalent to a non-metallic device. The unavailability of the doctrine of equivalents could be explained either as the product of an impermissible vitiation of the "non-metallic" claim limitation, or as the product of a clear and binding statement to the public that metallic structures are excluded from the protection of the patent. [T]he foreclosure of reliance on the doctrine of equivalents in such a case depends on whether the patent clearly excludes the asserted equivalent structure, either implicitly or explicitly.

Id. at 1346-47. Thus, because the patentee had "clearly exclude[d]" one of only two possible structures, "competitors and the public were free to draw the reasonable conclusion that the patentee was not seeking patent protection for catheters that used a dual lumen configuration." *Id.* at 1347.

This court was confronted with a similar fact pattern in *Gaus v. Conair Corp.*, where the technology at issue related to "a safety mechanism that prevents fatal shocks to users of electrical appliances such as hairdryers" due to immersion of the appliance in water. 363 F.3d 1284, 1285 (Fed. Cir. 2004). In particular, the safety mechanism of the patented invention employed protective circuitry designed to detect the invasion of water *before* any such water could reach the voltage-carrying components of the appliance itself. *Id.* at 1289. The safety mechanism of the accused appliance, however, would not react *until* water reached the voltage-carrying components of the

appliance. *Id.* at 1290. This would result in the user experiencing a brief, but non-fatal shock. *Id.* Ironically, we noted, "one of the principal advantages of the claimed invention [over the prior art]" touted in the patent's specification was the invention's ability to "protect [ ] the user from such a shock." *Id.* at 1289. Thus, we held that the patentee's criticism of this prior art characteristic amounted to a surrender of claim scope that the patentee could not "reclaim . . . by invoking the doctrine of equivalents." *Id.* at 1291; *see also Dawn Equip. Co. v. Ky. Farms Inc.,* 140 F.3d 1009, 1016 (Fed. Cir. 1998) (holding that statements in the written description touting the ability of the patented invention to overcome disadvantages in the prior art "strongly suggest, if not mandate, judgment in [the defendant's favor]" where the accused products suffered the very same disadvantages).

In this case, Toyota analogizes the '970 patent's criticism of the Berman/TRW design to the criticism of prior art discussed in *SciMed, Gaus*, and *Dawn Equipment*. We disagree. As the written description of the '970 patent reveals, the primary disadvantage of the Berman/TRW design is its control system, which relies upon a human operator to select the mode of operation. '970 patent, col. 3, ll 24-25 ("[T]he operator must control the transition between the several modes of operation."). Paice overcame this disadvantage by using a microprocessor to determine the most appropriate mode of operation based on its monitoring of control inputs from the driver, as well as several other variables. *Id.* at col. 6, ll 19-26. Toyota's

drive trains use a microprocessor in the same manner as the '970 patent, i.e., the microprocessor determines the most appropriate mode of operation based on its monitoring of control inputs from the driver, as well as several other variables. J.A. 1225. Therefore, the '970 patent's discussion of the Berman/TRW design's disadvantages does not preclude the application of the doctrine of equivalents to Toyota's accused transaxle units.

To be sure, the written description of the '970 patent does point out that the Berman/TRW "gear train . . . appears to be quite complex and difficult to manufacture economically." Col. 3, ll 26-27. However, to the extent Paice drew a distinction between its design and the Berman/TRW design, the distinction is clearly secondary and equivocal at best. Moreover, it is far from obvious which portion of the gear train is supposed to be "quite complex and difficult to manufacture economically." Paice may have been referring to the arrangement of the motors, engine, and planetary gear set, or to the control system described in the Berman/TRW patents. The intrinsic evidence simply does not provide any resolution to this ambiguity. Consequently, this is not a case like *SciMed* where the patentee selected one configuration for "all embodiments" of the invention to the exclusion of the only other known configuration. Nor is this a case like *Gaus* or *Dawn Equipment* where the patentee touted the invention's improvements over the very same subject matter sought to be recaptured under the doctrine of equivalents. Thus, we find

nothing in the written description of the '970 patent that amounts to a disavowal sufficient to overturn the jury's finding of infringement.

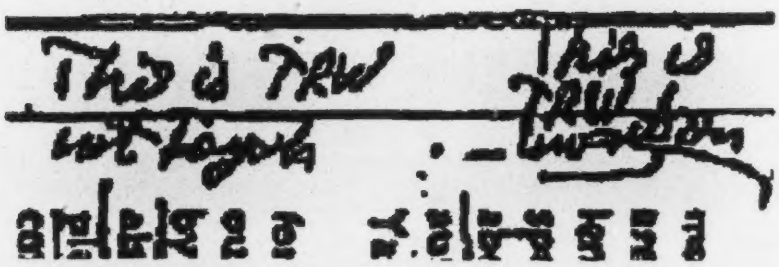
In spite of the above-mentioned differences between the Berman/TRW design and Toyota's design, Toyota argues that Paice is bound by various statements it made equating the Berman/TRW design to Toyota's design. According to Toyota, Paice's disavowal of the Berman/TRW design relative to the limitations of the '970 claims acts as a disavowal of Toyota's accused transaxle units. In the written description of the '672 patent, Paice distinguished Toyota's Prius I transaxle unit (which also uses a planetary gear unit to combine torque):

> Various articles describe several generations of Toyota Motor Company hybrid vehicles, stated soon to be available commercially.... Toyota describes this vehicle as a "series-parallel hybrid"; regardless of the label applied, *its powertrain appears to be similar to that of the Berman patents* described above, *that is, torque from either or both of an internal combustion engine and an electric motor are controllably combined in a "power-split mechanism" and transmitted to the drive wheels through a planetary gearset* providing the functionality of a variable-ratio transmission.

'672 patent, col. 8, ll 45-65 (emphases added). This statement, however, merely acknowledges what we have already observed, i.e., that both designs utilize a

planetary gear unit to output combined torque. That observation does not imply that the Berman/TRW and Prius I designs are identical relative to the limitations of the '970 claims. Indeed, the written description of the '672 patent touts the advantages of its clutch-based design over both the CTTU-based design of the '970 patent *and* the planetary gear unit design of the Prius I. *Id.* at col. 9, ll 38-51; col. 12, ll 17-21. This is entirely consistent with the jury's finding that Toyota's planetary gear unit design infringes the CTTU-based design of the '970 patent but not the clutched-based design of the '672 patent.

To further buttress its argument that Paice equated the Berman/TRW design with the accused drive trains and disclaimed them, Toyota cites a host of extrinsic evidence, including a Paice "business plan" explaining the cost disadvantages of the Berman/TRW design, J.A. 12235; a confidential document written by Paice founder Dr. Alex Severinsky describing "[t]he Toyota Hybrid Drive" as an "*EXACT* copy" of the Berman/TRW design, J.A. 12089; an article quoting a co-inventor of the '088 patent as describing "the Toyota TMS" system to be a "one-on-one copy" of the Berman/TRW design, J.A. 15754; a page from Paice's "marketing materials" asserting that the "Toyota Prius" "is the realization of the 1971 TRW patent," J.A. 15348; an email from Dr. Severinsky to Toyota stating that Paice's "technology is quite opposite to your Prius," J.A. 12097; and the following notations hand written by Dr. Severinsky in the margin of an article describing the Prius I:



J.A. 12085 (notations read "This is TRW not Toyota" and "This is TRW invention").[11]

Although the parties disagree as to whether extrinsic evidence may give rise to a disavowal of subject matter, we need not address this point. Simply put, we reject Toyota's contention that Paice's statements equating the Berman/TRW design to Toyota's design amount to a complete disavowal of the accused transaxle units.

3. Admissions by Counsel

The third and final reason Toyota urges us to overturn the jury's finding of infringement relates to a portion of the opening statement made to the jury by counsel for Paice:

> And keep in mind that Toyota can cut off damages tomorrow. Toyota can make sure they never have to pay Paice another cent by doing what? *By going back to the Prius I* and

[11] Dr. Severinsky testified at trial that these notations represent his shorthand way of saying that the Berman/TRW design is "very similar" to the Prius I design. J.A. 1161.

> don't use Dr. Severinsky's high voltage/low current invention anymore and stop using road load.

J.A. 1130 (emphasis added). According to Toyota, this is a binding judicial admission by Paice that the Prius I does not infringe any of the patents in suit. In Toyota's opinion, "the undisputed evidence established that the structural configurations of the accused vehicles are the same as the Prius I for purposes of determining infringement." Appellants' Br. 58. Therefore, Toyota argues, this admission necessarily implies that none of the accused vehicles infringe.

The district court agreed with Toyota to a certain extent, and held that the above statement constitutes a "binding admission" that Prius I does not infringe the patents-in-suit. *Paice LLC v. Toyota Motor Corp.*, No. 2:04-CV-211, Docket No. 225, slip op. at 13 (E.D. Tex. Aug. 16, 2006). The district court noted, however, that the jury did not consider whether the claim limitations were "met equally by the *Prius I* as the Prius II." *Id.* slip op. at 13-14. Therefore, the district court disagreed that the evidence established that the structural configurations of the accused vehicles are the same as the Prius I for purposes of determining infringement. Instead, the court concluded, "there is sufficient evidence underlying the jury's verdict and that verdict should not be overturned based on the conclusory admission by Plaintiff's counsel." *Id.* slip op. at 14.

In effect, the district court treated the statement as merely an *evidential* admission – as opposed to a conclusive admission – which the jury was free to weigh against the other evidence adduced at trial.[12] *See Pickens v. Equitable Life Assurance Soc'y,* 413 F.2d 1390, 1393-94 (5th Cir. 1969) (holding that a district court properly treated an admission as evidential and submitted it to the jury for consideration). In light of what we view as tenuous logic in Toyota's argument, and the "conclusory" nature of the admission itself, we think the district court acted well within the confines of its discretion by ruling as it did.

Having rejected all three reasons set forth by Toyota for overturning the jury's finding of infringement, we hold that the district court did not err in denying Toyota's motion for JMOL.

B. Paice's Cross Appeal

We next address the issues presented by Paice's cross appeal, namely, (1) the district court's denial of the motion for JMOL of no literal infringement of claims 11 and 39 of the '970 patent, claim 15 of the '672 patent, and claims 1 and 2 of the '088 patent;

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[12] Indeed, when Paice objected at trial to the introduction of evidence regarding Prius I, the district court decided that it would "allow the testimony," but that it would also "allow [Paice] great leeway in cross-examining on these issues . . . and . . . see what weight the jury gives [the evidence] under those circumstances." Trial Tr. 14:17-22, Dec. 15, 2005.

and (2) the district court's imposition of an ongoing royalty of $25 per Prius II, Toyota Highlander, or Lexus RX400h vehicle subsequently sold by Toyota. As with Toyota's appeal, we reject each of Paice's contentions with respect to infringement issues. With respect to the ongoing royalty, however, we are unable to determine whether the district court abused its discretion. Accordingly, we must vacate a limited portion of the district court's order and remand for further proceedings.

1. Denial of JMOL

Paice argues that the verdict of no literal infringement of claims 11 and 39 of the '970 patent, which was based on the jury's determination that the CTTU limitation is not satisfied by Toyota's drive train, is unsupported by the evidence. With respect to Toyota's argument that the accused drive trains lack a "multi-input device or component," Paice points out that nothing in the district court's claim construction "prevents a single shaft from being both an input and an output shaft," or "limit[s] the nature or the location of the input." Appellee's Br. 57-58. Paice's argument, however, misses the point of Dr. Caulfield's testimony. Because the combination of the fractional (72%) ICE torque with the MG2 torque does not occur until after the fractional ICE torque is *output* from the planetary gear unit to the ring gear, there is no single "device or component" in Toyota's design that can be characterized as "multi-input." Although the jury, in light of its equivalence verdict, must have

seen Dr. Caulfield's distinction as insubstantial, we believe that his testimony provided the jury with substantial evidence upon which to base its finding of no literal infringement of claims 11 and 39 of the '970 patent.

Paice further argues that the jury's verdict of no literal infringement of claim 15 of the '672 patent and claims 1 and 2 of the '088 patent, each of which contains a clutch limitation, is unsupported by the evidence. The district court construed the term "clutch" as "a device that selectively permits or prohibits transfer of torque and rotation." *Claim Construction Opinion,* slip op. at 33. According to Dr. Nichols, the court's construction is satisfied by a combination of the planetary gear unit, the ICE shaft, the shaft leading from the ring gear to the drive sprocket, and the drive sprocket itself. J.A. 1256-57. This combination can be controlled either by MG2, which is able to prevent torque transfer from the ICE shaft to the drive sprocket by providing a counter torque at the ring gear sufficient to negate torque provided by the ICE shaft, J.A. 1257, or by a parking pawl, which is simply a lock that prevents movement of the gears, J.A. 1552-53. However, because the court's construction literally requires "a device, not a number of devices" to act as the clutch, Dr. Caulfield explained that the planetary gear unit, as a single device, will always transfer any torque provided by the ICE to the ring gear output. J.A. 1522, 1553 ("For clarity, [torque] gets out of the device, which is the

planetary, and goes to the parking pawl, which is a couple of gears downstream. . . .").

Once again, we believe this testimony provided the jury with substantial evidence upon which to base its finding of no literal infringement of claim 15 of the '672 patent, and claims 1 and 2 of the '088 patent. Therefore, we hold that the district court did not err in denying Paice's motion for JMOL.

2. Imposition of an Ongoing Royalty

Finally, we address the district court's ongoing-royalty order, which allows Toyota to continue using the invention of the '970 patent at a cost of $25 per accused vehicle.[13] The district court's order reads:

> Defendants are hereby ORDERED, for the remaining life of the '970 patent, to pay Plaintiff an ongoing royalty of $25.00 per infringing

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[13] We use the term ongoing royalty to distinguish this equitable remedy from a compulsory license. The term "compulsory license" implies that *anyone* who meets certain criteria has congressional authority to use that which is licensed. *See, e.g.*, 17 U.S.C. § 115 ("When phonorecords of a nondramatic musical work have been distributed . . . under the authority of the copyright owner, *any other person* . . . may, by complying with the provisions of this section, obtain a compulsory license to make and distribute phonorecords of the work." (emphasis added)). By contrast, the ongoing-royalty order at issue here is limited to one particular set of defendants; there is no implied authority in the court's order for any other auto manufacturer to follow in Toyota's footsteps and use the patented invention with the court's imprimatur.

> Prius II, Toyota Highlander, or Lexus RX400H (the "infringing vehicles"). Royalties shall be paid quarterly and shall be accompanied by an accounting of the sales of infringing vehicles. Payments shall begin three months after the date of signing this judgment and shall be made quarterly thereafter. The first payment shall include royalties for all infringing vehicles sold that were not accounted for in the jury's verdict. Payments not made within 14 days of the due date shall accrue interest at the rate of 10%, compounded monthly. Plaintiff shall have the right to request audits. It is anticipated that the parties may wish to agree to more comprehensive and convenient terms. The parties shall promptly notify the Court of any such agreement. The Court maintains jurisdiction to enforce this portion of the Final Judgment.

J.A. 110. Paice argues that the district court did not have the statutory authority to issue this order, and that, even if the court did have such authority, Paice was denied its right to a jury trial under the Seventh Amendment to determine the amount of the ongoing royalty rate.[14]

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[14] Paice also argues that the ongoing royalty inhibits Paice's ability to grant an exclusive license under its patent. To the extent Paice's inability to grant an exclusive license is a valid consideration, the fact that § 283 is permissive indicates that concerns regarding exclusivity do not outweigh other equitable factors. The district court considered this factor and rejected it,

(Continued on following page)

We begin with the language of 35 U.S.C. § 283, which provides in relevant part:

> The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.

Perhaps the most apparent restriction imposed by § 283 is that injunctions granted thereunder must "prevent the violation of any right secured by patent." We have previously held that this statutory language limits the scope of activities that may be enjoined. *See, e.g., Joy Techs. v. Flakt, Inc.*, 6 F.3d 770, 777 (Fed. Cir. 1993) (holding that noninfringing acts may not be enjoined). The more difficult question raised by this case, however, is whether an order *permitting* use of a patented invention in exchange for a royalty is properly characterized as *preventing* the violation of the rights secured by the patent.

Under some circumstances, awarding an ongoing royalty for patent infringement in lieu of an injunction may be appropriate. In *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 628 (Fed. Cir. 1985), this court upheld a 5% court-ordered royalty,

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concluding that "other potential licensees would [not] be less likely to take a license if this case ends with monetary damages instead of equitable relief." J.A. 100. This finding is supported by substantial evidence.

based on sales, "for continuing operations." Although the parties in that case contested the amount of the royalty, styled a "compulsory license" by the court, there was no dispute as to the district court's authority to craft such a remedy. *See id.* In the context of an antitrust violation, "mandatory sales and reasonable-royalty licensing" of relevant patents are "well-established forms of relief when necessary to an effective remedy, particularly where patents have provided the leverage for or have contributed to the antitrust violation adjudicated." *United States v. Glaxo Group Ltd.*, 410 U.S. 52, 59 (1973).

But, awarding an ongoing royalty where "necessary" to effectuate a remedy, be it for antitrust violations or patent infringement does not justify the provision of such relief as a matter of course whenever a permanent injunction is not imposed. In most cases, where the district court determines that a permanent injunction is not warranted, the district court may wish to allow the parties to negotiate a license amongst themselves regarding future use of a patented invention before imposing an ongoing royalty. Should the parties fail to come to an agreement, the district court could step in to assess a reasonable royalty in light of the ongoing infringement.

In this case, the district court, after applying the four-factor test for a permanent injunction and declining to issue one, imposed an ongoing royalty sua sponte upon the parties. But, the district court's order provides no reasoning to support the selection of $25 per infringing vehicle as the royalty rate. Thus, this

court is unable to determine whether the district court abused its discretion in setting the ongoing royalty rate. Accordingly, we think it prudent to remand the case for the limited purpose of having the district court reevaluate the ongoing royalty rate. Upon remand, the court may take additional evidence if necessary to account for any additional economic factors arising out of the imposition of an ongoing royalty.[15] The district court may determine that $25 is, in fact, an appropriate royalty rate going forward. However, without any indication as to why that rate is appropriate, we are unable to determine whether the district court abused its discretion. *Cf. Hensley v. Eckerhart,* 461 U.S. 424, 437 (1983) ("It [is] important . . . for the district court to provide a concise but clear explanation of its reasons for the fee award."). The district court should also take the opportunity on remand to consider the concerns Paice raises about the terms of Toyota's permissive continuing use.

Finally, we address Paice's argument that it was entitled to a jury trial to determine the amount of the ongoing royalty rate. "The Seventh Amendment provides that 'in Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved. . . .'" *Markman v.*

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[15] This process will also, presumably, allow the parties the opportunity to present evidence regarding an appropriate royalty rate to compensate Paice and the opportunity to negotiate their own rate prior to the imposition of one by the court, as the concurrence suggests.

Westview Instruments, Inc., 517 U.S. 370, 376 (1996). "The constitutional question of whether a party is entitled to a jury trial is a question of law that this court reviews de novo." *Tegal Corp. v. Tokyo Electron Am., Inc.*, 257 F.3d 1331, 1339 (Fed. Cir. 2001).[16] "[W]e ask, first, whether we are dealing with a cause of action that either was tried at law at the time of the founding or is at least analogous to one that was." *Markman*, 517 U.S. at 376. "If the action in question belongs in the law category, we then ask whether the particular trial decision must fall to the jury in order to preserve the substance of the common-law right as it existed in 1791." *Id.*

In contending that it was improperly deprived of a jury trial, Paice merely states that "[i]t is well settled that the determination of damages is a legal question which carries a Seventh Amendment right to a jury trial." Appellee's Br. 64. While Paice may be correct as a general matter, not all monetary relief is properly characterized as "damages." *See, e.g., Root v. Ry.*, 105 U.S. 189, 207 (1882) ("When, . . . relief was sought which equity alone could give . . . in order to

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[16] Preliminary to our Seventh Amendment inquiry, we must satisfy ourselves that the statute in question cannot be read in a manner that avoids the constitutional question. *Tull v. United States*, 481 U.S. 412, 417 n.3 (1987). The wording of 35 U.S.C. § 283, which empowers "*courts* . . . [to] grant injunctions in accordance with the principles of *equity* . . . on such terms as the *court* deems reasonable," leaves no doubt that Congress did not intend to statutorily entitle patentees to a jury trial for the purposes of awarding relief thereunder. (Emphases added.)

avoid a multiplicity of suits and to do complete justice, the court assumed jurisdiction to award compensation for the past injury, not, however, by assessing damages, which was the peculiar office of the jury, but requiring an account of profits. . . ."); *cf. Bowen v. Massachusetts,* 487 U.S. 879, 910 (1988) ("[E]ven if the District Court's orders are construed in part as orders for the payment of money by the Federal Government to the State, such payments are not 'money damages'. . . . That is, since the orders are for specific relief (they undo the Secretary's refusal to reimburse the State) rather than for money damages (they do not provide relief that substitutes for that which ought to have been done) they are within the District Court's jurisdiction. . . ."). As such, the fact that monetary relief is at issue in this case does not, standing alone, warrant a jury trial. Accordingly, Paice's argument falls far short of demonstrating that there was any Seventh Amendment violation in the proceedings below.

V. CONCLUSION

For the reasons discussed, we vacate and remand the portion of the district court's final order insofar as it relates to the imposition of an ongoing royalty at a rate of $25 per infringing vehicle. In all other respects, we affirm.

AFFIRM-IN-PART, VACATE-IN-PART, AND REMAND

United States Court of Appeals
for the Federal Circuit

2006-1610, -1631

PAICE LLC,

Plaintiff-Cross Appellant,

v.

TOYOTA MOTOR CORPORATION,
TOYOTA MOTOR NORTH AMERICA, INC.,
and TOYOTA MOTOR SALES, U.S.A., INC.,

Defendants-Appellants.

RADER, Circuit Judge, concurring.

I agree with the court's judgment in this matter, with respect to both Toyota's appeal and Paice's cross-appeal. But, I write separately to express my opinion that in remanding to the district court for reevaluation of the "ongoing royalty" rate, this court should do more than suggest that "the district court *may* wish to allow the parties to negotiate a license amongst themselves . . . before imposing an ongoing royalty." Slip. op. at 1315 (emphasis added). Instead, this court should *require* the district court to remand this issue to the parties, or to obtain the permission of both parties before setting the ongoing royalty rate itself.

District courts have considerable discretion in crafting equitable remedies, and in a limited number of cases, as here, imposition of an ongoing royalty may be appropriate. Nonetheless, calling a compulsory license an "ongoing royalty" does not make it any

less a compulsory license. To avoid many of the disruptive implications of a royalty imposed as an alternative to the preferred remedy of exclusion, the trial court's discretion should not reach so far as to deny the parties a formal opportunity to set the terms of a royalty on their own. With such an opportunity in place, an ongoing royalty would be an ongoing royalty, not a compulsory license.

In this case, because the court imposed an ongoing royalty on the parties *sua sponte* after denying injunctive relief, the parties had no meaningful chance to present evidence to the district court on an appropriate royalty rate to compensate Paice for Toyota's *future* acts of infringement. Evidence and argument on royalty rates were, of course, presented during the course of the trial, for the purposes of assessing damages for Toyota's *past* infringement. But pre-suit and post-judgment acts of infringement are distinct, and may warrant different royalty rates given the change in the parties' legal relationship and other factors. When given choices between taking additional evidence or not, and between remanding to the parties or not, a district court may prefer the simplest course – impose its own compulsory license. This simplest course, however, affords the parties the least chance to inform the court of potential changes in the market or other circumstances that might affect the royalty rate reaching into the future.

In most cases, the patentee and the infringer should receive an opportunity at least to set license terms that will apply to post-suit use of the patented

invention. This general principle has deep roots in both law and policy. Projecting the costs to be incurred for what would otherwise be future acts of infringement is necessarily a speculative exercise, even for the most stable markets and technologies. As licenses are driven largely by business objectives, the parties to a license are better situated than the courts to arrive at fair and efficient terms. After all, it is the parties, rather than the court, that will be bound by the terms of the royalty. Particularly in the case of the patentee, who has proven infringement of its property right, an opportunity to negotiate its own ongoing royalty is a minimal protection for its rights extending for the remainder of the patent term.

For these reasons, I would require the district court to allow the parties an opportunity to set the ongoing royalty rate, or, at least to secure the permission of both parties before setting the rate itself. Of course, if the parties cannot reach agreement, the court would retain jurisdiction to impose a reasonable royalty to remedy the past and ongoing infringement.

APPENDIX B

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

PAICE LLC,	§	
Plaintiff,	§	
	§	
v.	§	**2:04-CV-211-DF**
TOYOTA MOTOR CORP., et al.,	§	
	§	
Defendants.	§	

ORDER

(Filed Aug. 16, 2006)

Before the Court is Defendants' Motion for Judgment as a Matter of Law or, in the Alternative, for a New Trial. Dkt. No. 208. Also before the Court is Plaintiff's response in opposition and Defendants' reply. Dkt. Nos. 211 and 217, respectively. Having considered the motion, all other relevant briefing, and the applicable law, the Court finds that Defendants' Motion for Judgment as a Matter of Law or, in the Alternative, for a New Trial should be **DENIED**.

I. BACKGROUND

In this patent infringement action, Plaintiff claimed three of Defendants' hybrid vehicles infringe three of Plaintiff's patents, U.S. Patent Nos. 5,343,970 ("the '970 patent"), 6,209,672 ("the '672 patent"), and

6,554,088 ("the '088 patent") (collectively, the "patents-in-suit").[1] Plaintiff alleged that nine claims among three patents were literally infringed by Defendants' accused vehicles and that ten claims were infringed under the doctrine of equivalents.

In December 2005, the case was tried to a jury. The jury found that Defendants' accused vehicles infringed claims 11 and 39 of the '970 patent under the doctrine of equivalents, but found no further infringement.

Defendants now move for judgment as a matter of law that claims 11 and 39 of the '970 patent are not infringed under the doctrine of equivalents.[2] In the alternative, Defendants move for a new trial.

II. THE PARTIES' POSITIONS

Defendants argue that the jury's finding of infringement as to claims 11 and 39 of the '970 patent

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[1] A detailed explanation of each of the asserted patents and the underlying technology can be found in the Court's Claim Construction Order. Dkt. No. 91. The present Order assumes familiarity with the patents-in-suit.

[2] Defendants also move, to preserve their rights, for Judgment as a Matter of Law that the '672 and '088 patents are invalid for prior public use and knowledge. Dkt. No. 208 at 1 and 23. This motion was made contingently, only to be considered in the event the jury's verdict of no infringement of the asserted claims is "challenged or overturned." *Id.* at 23. Because this contingency remains unsatisfied, the Court does not reach this portion of Defendants' motion.

under the doctrine of equivalents should be overturned because there is insufficient evidence to support the verdict. Dkt. No. 208 at 1. Defendants also argue that the verdict is unsustainable as to each claim on alternative grounds. And finally, Defendants alternatively seek a new trial charging that the Court erred in its claim construction and jury instructions.

According to Defendants, Plaintiff's doctrine of equivalents ("DOE") evidence consisted of:

> Testimony from [Plaintiff's] expert, Dr. Nichols, which provides only a single sentence for each of his function, way, and result analysis, and which also fails to discuss a separate function, way, and result for both the limitations and accused element. . . .

Dkt. No. 208 at 5, citing testimony. Defendants also argue Plaintiff's counsel never discussed the doctrine of equivalents, in particular failing to specifically address the doctrine of equivalents during closing argument. *Id.* at 6.

Defendants argue the record is legally insufficient to sustain the jury's verdict for at least five reasons. *Id.* First, Defendants argue the evidence of record fails to set forth an element-by-element analysis of the accused vehicles and the allegedly equivalent components not found literally present. *Id.* at 2, 7-9. Instead, Defendants argue Plaintiff's analysis only addressed the accused vehicles as a whole. Second, Defendants argue that the record evidence is not sufficiently particularized with regard to the

doctrine of equivalents analysis. *Id.* at 2, 10-13. Third, Defendants argue that a finding of infringement under the doctrine of equivalents requires a "presentation of evidence and analysis of the equivalents issue separate and apart from" a literal infringement presentation, a requirement Plaintiff's failed to satisfy. *Id.* at 14-15. Fourth, Defendants argue Plaintiff failed to make a "linking" argument, which is required so that juries do not reach a finding of infringement by equivalents as a compromise. *Id.* 2, 15-16. And, fifth, Defendants argue that Plaintiff's doctrine of equivalents theory is legally insufficient because it seeks to cover a planetary gear system despite having cast such system as undesirable in the '970 patent specification. *Id.* at 3, 17-19.

Separately, Defendants argue the infringement finding on claim 11 must be overturned in light of an admission by Plaintiff's counsel. During opening statements, Defendants argue that Plaintiff's counsel admitted the non-accused Prius I does not infringe the asserted patents. *Id.* at 3, 20-21, citing 12/6/2005 PM Tr. at 50:8-18. According to Defendants, because the accused vehicles operate identically to the Prius I with respect to the limitations of claim 11, Defendants' argue that Judgment as a Matter of Law of non-infringement of this claim is proper. Dkt. No. 208 at 3, 21.

Regarding the jury verdict of infringement of claim 39, Defendants argue this must be overturned because it cannot be reconciled with the jury's verdict

that claim 7, with the same electrical current limitation, is not infringed. *Id.* at 3, 21-22.

Defendants move for a new trial on the grounds that the claim construction and jury charge were prejudicially erroneous. Dkt. No. 208 at 4, 23. According to Defendants, many claim terms were construed too broadly. In particular, Defendants again raise their claim construction argument that the claim term "controllable torque transfer unit" be construed according to the requirements of 35 U.S.C. § 112 ¶ 6. Also, according to defendants, the jury charge regarding the doctrine of equivalents was unbalanced in the Plaintiff's favor. *Id.* at 4. Because the Court gave a standard charge on the doctrine of equivalents, without the charge proffered by Defendants to the effect that the scope of equivalents for infringement cannot include inventions in the prior art, Defendants argue the jury instructions were prejudicially erroneous. *Id.* at 23-25.

Plaintiff responds in opposition arguing that the record as a whole contains substantial evidence that supports the jury's finding of infringement under the doctrine of equivalents. Plaintiff addresses each of Defendants' five points as follows. First, Plaintiff argues that it "plainly" made an element-by-element comparison, citing testimony and evidence, though it did not and was not required to identify a single equivalent structure in the accused products corresponding to each limitation. Dkt. No. 211 at 2-3. According to Plaintiff, Defendants' argument is based on a faulty premise. *Id.* at 3.

Second, Plaintiff argues that the evidence and testimony adequately discussed the function/way/result ("FWR") analysis for infringement under the doctrine of equivalents and properly compared the claimed structure to the structure in the accused products. *Id.* at 8. Plaintiff cites testimony and evidence to demonstrate proper application of the FWR test. *Id.* at 8-11. According to Plaintiff, its evidence satisfied the applicable legal standard for setting forth particularized testimony and linking argument as to the insubstantiality of differences for an infringement finding under the doctrine of equivalents. Dkt. No. 211 at 11. Plaintiff argues that Defendants' restatement of the requirement is artificially high and distinguishes each of the cases cited by Defendants for its stated legal standard. Under the proper legal standard, however, Plaintiff argues it satisfies the requirements. Dkt. No. 211 at 11-14.

Plaintiff further argues that its evidence was not improperly subsumed in its literal infringement evidence. *Id.* at 14. According to Plaintiffs, a doctrine of equivalents analysis is improperly "subsumed" only when a party says nothing about the doctrine of equivalents. *Id.* at 15. Plaintiff argues that even though its technical expert "simultaneously stated his belief that both literal and equivalent infringement was present . . . [this] does not denigrate or otherwise undermine his extensive testimony and analysis regarding equivalent infringement." *Id.* at 15.

Fourth, Plaintiff responds that it met the legal requirement for particularized testimony and linking

argument, under both the proper legal standard and the overstated standard posed by Defendants. Plaintiff argues that Defendants overread the requirement for a linking argument, which is targeted toward ensuring that the jury not be "put to sea" without guidance as to the facts or how to analyze the evidence of equivalents. Dkt. No. 211 at 17. Testimony from both parties' technical experts, Plaintiff argues, established the necessary linking and provided the jury with a framework under which to conduct its equivalents analysis. Dkt. No. 211 at 18.

Fifth, Plaintiff responds that a planetary gear unit can properly be found as an equivalent because the use of one was never disavowed. *Id.* at 19. Plaintiff further argues that the drawbacks of a planetary gear system as set forth in the '970 patent specification address the cost differential for the use of such component, a factor that Plaintiff argues has no bearing on the equivalents analysis. *Id.* Plaintiff also distinguishes Defendants' cited case on this point. Dkt. No. 211 at 19-21.

To Defendants' "binding admission" argument, Plaintiff responds that its counsel's comment during opening statement, when viewed in context, does not amount to a "clear and unambiguous admission of fact" and therefore is not an admission. *Id.* at 21. In any event, Plaintiff argues that Defendants did not prove that the Prius I and II are the same, and the jury was presented with sufficient evidence to make their ultimate infringement finding. *Id.* at 21-22.

Therefore the jury's verdict as to claim 11 should stand. *Id.* at 22.

In reconciling the jury verdict with respect to claims 7, 8 and 39, Plaintiff argues that the claim elements relating to the current limitation in claims 7 and 39 are not the same. And, according to Plaintiff, the clear differences in the language of claims 7 and 39 could lead a jury to conclude that one claim was infringed while the other was not. *Id.* at 23. Further, Plaintiff argues that Defendants' "purported inconsistency" in the jury's infringement findings is actually another attempt at reading a claim limitation in from the specification – a position rejected by the Court on more than one occasion. *Id.* at 23-24. So long as the claim limitations are met, Plaintiff argues, those claims can be infringed even without achieving every advantage of the claimed invention. *Id.* at 24.

Lastly, Plaintiff argues that Defendants have failed to articulate grounds for a new trial, taking the position that the first trial was not unfair to Defendants. *Id.* at 25.

In reply, Defendants argue that Plaintiff, responding that the trial record contained sufficient evidence of infringement under the doctrine of equivalents, pointed only to evidence of literal infringement. Dkt. No. 217 at 2. Further, Defendants reply that it has not faulted Plaintiff for merely failing to use the "magic words;" rather Defendants argue Plaintiff failed to present evidence that complies with the requirements long-established by

Federal Circuit precedent for demonstrating infringement under the doctrine of equivalents. Dkt. No. 217 at 3.

III. LEGAL PRINCIPLES

Federal Rule of Civil Procedure 50 governs motions for judgment as a matter of law ("JMOL") in jury trials and motions for new trial. A motion for JMOL may be granted against a party if "a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." Fed. R. Civ. P. 50(a). After a motion for JMOL is denied, "the court is considered to have submitted the action to the jury subject to the court's later deciding the legal questions raised by the motion," and it may grant a renewed motion for JMOL pursuant to Rule 50(b) after the trial. Fed. R. Civ. P. 50(b).

Fifth Circuit law is controlling on this JMOL motion. *See, e.g., Callicrate v. Wadsworth Mfg.*, 427 F.3d 1361, 1366 (Fed. Cir. 2005); *see also* Dkt. No. 213 at 2, n.1 (parties agree that regional circuit law controls). In the Fifth Circuit, entry of judgment as a matter of law under Rule 50(b)(1)(C) is appropriate if evidence supporting the movant is "uncontradicted and unimpeached [or] if the facts and inferences point so strongly and overwhelmingly in favor of one party that the Court believes that reasonable men could not arrive at a contrary verdict. . . ." *Med. Care Am., Inc. v. Nat'l Union Fire Ins. Co.*, 341 F.3d 415, 420 (5th

Cir. 2003). The grant of a new trial under Rule 50(b)(1)(B) is proper where the jury's verdict is against the great weight of the evidence or will result in a miscarriage of justice. *See Pryor v. Trane Co.*, 138 F.3d 1024, 1026 n.3 (5th Cir. 1998) (quoting *Thompson & Co. v. Partridge*, 636 F.2d 945, 957 (5th Cir. 1981)).

A Rule 50 motion should be granted where "under the governing law, there can be but one reasonable conclusion as to the verdict." *Anderson v. Liberty Lobby, Inc.*, 106 S. Ct. 2505, 2511 (U.S. 1986). If reasonable minds could differ as to the import of the evidence, however, a verdict should not be directed. *Id.*

IV. DISCUSSION

I. Defendants' Challenge to the Plaintiff's Doctrine of Equivalents Evidence

Viewing the evidence as a whole, the Court is not persuaded that Plaintiff failed to proffer sufficient evidence of infringement under the doctrine of equivalents. The technical experts from both parties were questioned regarding doctrine of equivalents and both gave extensive testimony. The Court agrees with Plaintiff that much of the detailed testimony given by Plaintiff's expert was relevant to his doctrine of equivalents analysis. Though Plaintiff's expert did not constantly reference the doctrine as he set forth his analysis, his analysis in combination with his testimony as to how he reached his opinion

that there was infringement under the doctrine of equivalents ensured that the jury had a proper evidentiary foundation and analytical framework to consider infringement under the doctrine. Because substantial evidence exists in the record to support the jury's finding of infringement under the doctrine of equivalents as to claims 11 and 39 of the '970 patent, the verdict will not be overturned.

Regarding Defendants' challenge that Plaintiff offered no "element-by-element" analysis, the Court finds that Plaintiff met this legal requirement. *Warner-Jenkinson Co. v. Hiltion Davis Chem. Co.*, 520 U.S. 17, 40 (1997). Essentially, Defendants focus on Plaintiff's failure to set forth argument of a one-to-one correspondence between the claim limitations and the alleged equivalent structure in the accused devices. Such one-to-one correspondence, however, is not required. *See, e.g., SunStuds, Inc. v. ATA Equip. Leasing, Inc.*, 872 F.2d 978, 989 (Fed. Cir. 1989).

In this case, expert testimony was offered comparing the claim element of a controllable torque transfer unit ("CTTU") to specific components in the accused vehicles that comprise the CTTU equivalent. 12/7/05 Trial Tr., PM, at 95:23-96:10; 109:16-110:1; 114:7-115:1; 12/8/05 Trial Tr., AM, at 7:14-8:10; *see also* citations at Dkt. No. 211 at 4-5. Further testimony was elicited on cross-examination. 12/8/05 Trial Tr., PM, at 82:13-84:8; *see also* citations in Dkt. No. 211 at 6-7. Viewed in conjunction with other testimony and evidence in the record, Plaintiff met the element-by-element requirement.

The Court also finds that there is sufficient evidence in the record to meet the "particularity" and "linking" requirements (Defendants' second and fourth points of argument). Defendants' argue that Plaintiff proffered only conclusory opinions that the FWR test was met. Instead, Defendants argue, Plaintiff was required to proffer testimony specific as to each prong of the FWR test and to explain why and how each prong of the test is met. Defendants also argue that Plaintiff did not meet the "linking" requirement because Plaintiff failed to explain to the jury how the evidence supports a finding of infringement by equivalents. Although Defendants argue there was insufficient evidence in the record for such argument by Plaintiff, Defendants further fault Plaintiff for failing to make any specific doctrine of equivalents argument during its closing.

Again, a review of the record demonstrates that Plaintiff's technical expert testified at length regarding his theories of infringement by the accused products. It is true, however, that Plaintiff's expert offered summary statements that, when individually pulled from the record, appear conclusory. Those summary statements, however, must be viewed in the context of the entire record and, when viewed as such, it is clear that there is sufficient evidence to meet the particularity requirement. *See* 739 F.2d 1576 at 1580. Further, when the record is viewed as a whole, it is apparent the "linking" requirement is met. The entire presentation of evidence must be considered, and during Plaintiff's presentation of its

technical expert, the FWR test was employed. Additional argument by Plaintiff's counsel was not required during closing argument. The jury in this case was presented with both particularized evidence and with linking testimony from which it could analyze infringement under the doctrine of equivalents, therefore satisfying the legal requirement.

It is worth noting that the "particularity" and "linking" requirements are aimed at ensuring that the fact-finder has an analytical framework within which it can make a doctrine of equivalents determination. Indeed, the Federal Circuit's overriding concern regarding the submission of an infringement under doctrine of equivalents theory to a jury is ensuring that "there is a proper evidentiary foundation from which [a jury] may permissibly conclude that a claim limitation has been met by an equivalent." *Comark Communs., Inc., v. Harris Corp.,* 156 F.3d 1182, 1188 (Fed. Cir. 1998). As the Federal Circuit remarked, these requirements are meant to ensure that the jury is not "put to sea without guiding charts when called upon to determine infringement under the doctrine." *Lear Siegler, Inc. v. Sealy Mattress Co., et al.,* 873 F.2d 1422, 1426 (Fed. Cir. 1989). In *Lear Siegler,* plaintiff's expert did not explicitly rely on the doctrine of equivalents and did not offer testimony specific to the doctrine. On appeal, the Federal Circuit found that plaintiff's doctrine of equivalents evidence was insufficient. *Id.* at 1426.

Notably in *Nestier Corp. v. Menasha Corporation-Lewisystems Division,* one of the first Federal Circuit

cases to address these requirements, the Circuit upheld a district court's decision not to instruct the jury on the doctrine of equivalents after the plaintiff's expert refused in open court to opine regarding infringement under the doctrine. 739 F.2d 1576, 1580 (Fed. Cir. 1984). The district court's decision was affirmed as, in addition to the expert's refusal, there was a lack of evidence of equivalents in the record to form a basis for analysis of equivalents by the jury.

Defendants' other cited cases are equally distinguishable. *See Texas Instruments, Inc. v. Cypress Semiconductor Corp., et al.,* 1995 U.S. Dist. LEXIS 20328, *26 (plaintiff's counsel disavowed reliance on the doctrine of equivalents during closing argument); 952 F.2d 1320, 1327 (Fed. Cir. 1991) (sole DOE evidence consisted of "offhand and conclusory statements" and left the jury "to its own imagination on the technical issue of equivalency.") In this case, the extensive testimony and evidence in the record set forth a framework and particularized evidence within which the jury could work through a finding of infringement under the doctrine of equivalents.

Turning to the third reason Defendants cite for overturning the jury's verdict, Defendants argue that Plaintiff's doctrine of equivalents evidence was improperly subsumed within the testimony on literal infringement. The underlying authority for this reason overlaps significantly with that cited by Defendants on their second and fourth points of argument. Again, the requirement that doctrine of equivalents evidence not be merely subsumed within

a literal infringement case is meant to ensure that a jury is provided with a proper evidentiary and analytical foundation to make a determination under the doctrine. Here, although much of the evidence relevant to both literal and doctrine of equivalents infringement was put in at the same time, Plaintiff's expert explained his conclusions separately under the doctrine. Therefore, the Plaintiff's doctrine of equivalents case was not improperly subsumed within its literal infringement case.

Lastly, Defendants' argue the planetary gear system cannot be equivalent to the controllable torque transfer unit in the asserted claims because the patent specification discusses problems with these systems thereby precluding them from being within the scope of equivalents. Defendants cite passages in the specification that it also cited in support of its rejected argument that the patentee had disavowed the use of planetary gear systems in the asserted patents. Based on these passages, Defendants make a related but not identical argument.[3]

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[3] Defendants cite *Sciemed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1345 (Fed. Cir. 2001) as authority for considering Plaintiff's internal and public documents in support of their argument. In that case, the district court relied principally on the intrinsic evidence when considering the appropriate scope of alternatives. Extrinsic evidence, such as the patentee's documents and witnesses, was considered insofar as it was consistent with statements in the specification. 242 F.3d at 1345. Similarly, this Court chiefly

(Continued on following page)

These passages state that planetary gear systems introduce "additional complexity, cost, and difficulty" into the hybrid vehicles and the systems are "complex and difficult to manufacture economically." '970 patent at 3:5-30. Additional passages cited by Defendants address the advantages of the claimed invention when implemented not using a planetary gear system.

Although the patent contains unfavorable statements regarding the planetary gear system, the statements do not lead to the conclusion that such systems were disclaimed from the scope of equivalents. The statements in the patent specification address cost and complexity disadvantages, but do not clearly disavow the use of the systems in implementations of the invention. *See Gaus v. ConAir Corp.*, 363 F.3d 1284, 1291 (Fed. Cir. 2004) (example of clear disavowal of scope of equivalents).[4] Further, if every limitation of the claimed invention is practiced, there is infringement even if the infringing article is inferior. *See Instituform Techs., Inc., v. Cat Contrating, Inc.*, 161 F.3d 688, 693 (Fed. Cir. 1988).

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relies on the intrinsic evidence to determine the scope of equivalents.

[4] *Dawn Equip. Co. v. Kentucky Farms Inc.* is not on point as there the scope of equivalents for a claim term construed according to the requirements of 35 U.S.C. §112 ¶6 was at issue. 140 F.3d 1009, 1016 (Fed. Cir. 1998).

II. Defendants' Alternative Challenge to Claim 11

The Court rejects Defendants' argument that, because Plaintiff's counsel made certain binding admissions, the jury's verdict of infringement of claim 11 must be overturned. First, the Court finds that Plaintiff's counsel's statement during opening that the Prius I does not infringe is a binding admission. 12/6/05 PM Trial Tr. at 50:8-18. This was a clear and unambiguous statement of fact. *See Oscanyan v. Arms Co.,* 103 U.S. 261, 262-4 (1881); *Zahra Spiritual Trust v. United States,* 1992 U.S. Dist. LEXIS 9448 *9-10 (W.D. Tex. June 22, 1992).

Defendants then argue that, because Prius I and Prius II operate identically for purposes of the limitations of claim 11, the Prius II cannot infringe claim 11. The Court rejects this argument as grounds for overturning the jury's verdict as to claim 11. The jury evaluated both parties evidence regarding the Prius II, in light of the asserted claims, and found infringement. The jury did not find, nor consider, whether every limitation of claim 11 was met equally by the *Prius I* as the Prius II. As detailed above, there is sufficient evidence underlying the jury's verdict and that verdict should not be overturned based on the conclusory admission by Plaintiff's counsel.

III. Defendants' Alternative Challenge to Claim 39

Defendants argue that the jury's verdict is inconsistent with respect to claims 7, 8 and 39 of the '970 patent. Specifically, because the limitations in these claims are basically the same, Defendants argue it was inconsistent for the jury to have found no infringement of claim 7 and 8[5] while finding infringement of claim 39. The Court disagrees. Differences in the claim language between claims 7 and 39 regarding the current limitations can account for the jury's verdict. As there was sufficient evidence for the jury's verdict, its finding of infringement on claim 39 should not be overturned.

IV. Defendants' Alternative Motion for New Trial

Defendants move in the alternative for a new trial on the grounds that the Court's claim construction was erroneous and the jury charge was erroneous and prejudicial. Regarding Defendants' argument that the claim term "controllable torque transfer unit" should be construed in accordance with §112 ¶6, the Court considered this argument during the claim construction phase of the case. For the reasons set

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[5] Because claim 8 depends from claim 7, it is appropriate to focus the analysis on the limitations of claim 7 with regard to this argument.

forth in the Claim Construction Order, this argument is again rejected.

Regarding the final jury charge on the doctrine of equivalents, Defendants essentially raise the same argument made during the charging conference. The jury instruction Defendants requested was first set forth in Defendants' proposed final jury instructions, Instruction at §4.5. Dkt. No. 86. As authority, Defendants cited the American Intellectual Property Law Association ("AIPLA") Model Patent Jury Instructions, "Limitations on the Doctrine of Equivalents," which cites to *Wilson Sporting Goods Co. v. David Geoffrey & Assoc.*, 904 F.2d 677 (Fed. Cir. 1990), and to *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337, 1346 (Fed. Cir. 2001). A modified version of the proposed instruction was later offered by Defendants, but the cited authority remained the same. *See* Dkt. No. 203.

As stated during the jury charge conference, the Court declined to include the instruction based on the authority Defendants cited. First, the *SciMed Life Sys.* opinion dealt with a situation in which the patentee, during the patent prosecution, specifically disclaimed certain prior art from the scope of equivalents. As discussed in the Claim Construction Order, this Court found that the patentee did not limit the scope of the claims by disclaiming use of a planetary gear unit. Thus, the *SciMed Life Sys.* case and the portion of the instruction based on that case are inapplicable here.

Second, the AIPLA model jury instruction is at most persuasive but does not itself serve as authority for the requested instruction. The sole citation underlying the model instruction is the *Wilson* case. In *Wilson,* the Federal Circuit found that a construed claim improperly covered a range of equivalents broad enough to encompass certain prior art. 904 F.2d at 685. The claim scope was improper because "prior art always limits what an inventor could have claimed [and] limits the range of permissible equivalents of a claim" so that "a patentee should not be able to obtain, under the doctrine of equivalents, coverage which he could not lawfully have obtained from the PTO by literal claims." *Id.* The court noted that the issue of whether an asserted range of equivalents would cover what is already in the public domain is one of law. *Id.* at 684. *Wilson* did not discuss the proper jury charge on this issue.

In addition to the reasons the Court gave for rejecting Defendants' proffered instruction during the jury charging conference, the Court finds that the cited authority was insufficient. The *Wilson* case clearly states that the issue of the scope of equivalents is a matter of law for the court to decide. As the Court had not ruled the planetary gear unit as outside the scope of equivalents for the asserted claims, the addition of the requested instruction would likely have caused confusion.

For these reasons, the Court finds Defendants' arguments for a new trial unavailing.

V. CONCLUSION

For all the above reasons, Defendants' Motion for Judgment as a Matter of Law or, in the Alternative, for a New Trial, Dkt. No. 208, is hereby **DENIED**.

SIGNED this 16th day of August, 2006.

/s/ David Folsom
DAVID FOLSOM
UNITED STATES
DISTRICT JUDGE

APPENDIX C

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

2006-1610, -1631

PAICE LLC,

Plaintiff-Cross Appellant,

v.

TOYOTA MOTOR CORPORATION, TOYOTA MOTOR NORTH AMERICA, INC., and TOYOTA MOTOR SALES, U.S.A., INC.,

Defendants-Appellants.

ORDER

NOTE: This order is nonprecedential.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

ORDER

(Filed Nov. 29, 2007)

A combined petition for panel rehearing and for rehearing en banc having been filed by the Appellants, and the petition for rehearing, having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED. The mandate of the court will issue on December 6, 2007.

FOR THE COURT,

/s/ Jan Horbaly/JB
Jan Horbaly
Clerk

Dated: 11/29/2007

cc: George E. Badenoch
Ruffin B. Cordell

PAICE V TOYOTA MOTOR, 2006-1610, -1631 (DCT – 2:04-CV-211)

APPENDIX D

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

PAICE, LLC,	§	
Plaintiff,	§	
	§	
v.	§	**CIVIL ACTION NO. 2:04-CV-211 (DF)**
TOYOTA MOTOR CORP., ET. AL.,	§	
	§	
Defendants.	§	

VERDICT FORM

(Filed Dec. 20, 2005)

You, the jury are to answer the following questions based on the evidence admitted at trial and according to the Instructions the Court has given you. Start with Question No. 1 and proceed through the questions following the directions included in this Verdict Form.

Question No. 1:

Has Paice proven by a preponderance of the evidence that the 2004 and later model year Toyota Prius infringes any of following claims of the patents in suit?

Answer "Yes" or "No" for each claim in each patent listed below.

'970 Patent		**Literal Infringement**	**Infringement under the doctrine of equivalents**
Claim 7	Answer:	No	No
Claim 8	Answer:		No
Claim 11	Answer:	No	Yes
Claim 39	Answer:	No	Yes

If, and only if, you find infringement under the doctrine of equivalents for a particular claim, list which element or elements of the 2004 and later model year Toyota Prius you find equivalent and the corresponding limitation or limitations of the claim. Use additional space if necessary.

Claim No.	Element(s)	Claim Limitation(s)
11	Planet. Gear Assm.	controlable [sic] torque transfer
39	Planet. Gear Assm.	controlable [sic] torque transfer

'672 Patent		Literal Infringement	Infringement under the doctrine of equivalents
Claim 15	Answer:	No	No
Claim 16	Answer:	No	No

If, and only if, you find infringement under the doctrine of equivalents for a particular claim, list which element or elements of the 2004 and later model year Toyota Prius you find equivalent and the corresponding limitation or limitations of the claim. Use additional space if necessary.

Claim No.	Element(s)	Claim Limitation(s)

'088 Patent		Literal Infringement	Infringement under the doctrine of equivalents
Claim 1	Answer:	No	No
Claim 2	Answer:	No	No
Claim 3	Answer:	No	No

If, and only if, you find infringement under the doctrine of equivalents for a particular claim, list which element or elements of the 2004 and later model year Toyota Prius you find equivalent and the

corresponding limitation or limitations of the claim. Use additional space if necessary.

Claim No.	Element(s)	Claim Limitation(s)
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____

Question No. 2:

Has Paice proven by a preponderance of the evidence that the Toyota Highlander/Lexus RX400H infringes any of following claims of the patents in suit?

Answer "Yes" or "No" for each claim of each patent listed below.

'970 Patent		**Literal Infringement**	**Infringement under the doctrine of equivalents**
Claim 7	Answer:	No	No
Claim 8	Answer:		No
Claim 11	Answer:	No	Yes
Claim 39	Answer:	No	Yes

If, and only if, you find infringement under the doctrine of equivalents for a particular claim, list which element or elements of the Toyota Highlander/Lexus

RX400H you find equivalent and the corresponding limitation or limitations of the claim. Use additional space if necessary.

Claim No.	Element(s)	Claim Limitation(s)
11	Planetary Gear Assm.	controlable [sic] torque transfer
39	Planetary Gear Assm.	controlable [sic] torque transfer

'672 Patent		**Literal Infringement**	**Infringement under the doctrine of equivalents**
Claim 15	Answer:	No	No
Claim 16	Answer:	No	No
Claim 26	Answer:	No	No

If, and only if, you find infringement under the doctrine of equivalents for a particular claim, list which element or elements of the Toyota Highlander/Lexus RX400H you find equivalent and the corresponding limitation or limitations of the claim. Use additional space if necessary.

Claim No.	Element(s)	Claim Limitation(s)

'088 Patent		Literal Infringement	Infringement under the doctrine of equivalents
Claim 1	Answer:	No	No

If, and only if, you find infringement under the doctrine of equivalents for a particular claim, list which element or elements of the Toyota Highlander/Lexus RX400H you find equivalent and the corresponding limitation or limitations of the claim. Use additional space if necessary.

Claim No.	Element(s)	Claim Limitation(s)

Question No. 3:

Has Paice proven by clear and convincing evidence that Toyota's infringement, if any, of the claims of any of the patents in suit was willful?

Answer "Yes" or "No" for each patent listed below.

'970 Patent	Answer:	No
'672 Patent	Answer:	No
'088 Patent	Answer:	No

Question No. 4:

Has Toyota proven by clear and convincing evidence that any of the claims of the patents in suit are invalid by anticipation?

Answer "Yes" or "No" for each claim listed below:

'672 Patent

Claim 15	Answer:	No
Claim 16	Answer:	No
Claim 26	Answer:	No

'088 Patent

Claim 1	Answer:	No
Claim 2	Answer:	No
Claim 3	Answer:	No

Question No. 5:

Has Toyota proven by clear and convincing evidence that any of the claims of the patents in suit are invalid for obviousness?

Answer "Yes" or "No" for each claim listed below:

'970 Patent

Claim 7	Answer:	No
Claim 8	Answer:	No
Claim 11	Answer:	No
Claim 39	Answer:	No

'672 Patent

Claim 15	Answer:	No
Claim 16	Answer:	No
Claim 26	Answer:	No

'088 Patent

Claim 1	Answer:	No
Claim 2	Answer:	No
Claim 3	Answer:	No

Question No. 6:

If you have found that any of the accused vehicles infringes any claim of the patents in suit, and the claim is valid, what is the reasonable royalty, if any, that would fairly and adequately compensate Paice for infringement?

Prius	$3,348,475.00
Highlander and RX 400H	$921,475.00

The foreperson must sign and date this verdict form:

/s/ Charles E. Wallau, Jr. 12/20/2005
FOREPERSON DATE

APPENDIX E

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PAICE, LLC	*	Civil Docket No.
VS.	*	2:04-CV-211
	*	Marshall, Texas
TOYOTA MOTOR CORPORATION, TOYOTA MOTOR NORTH AMERICA, INC., and TOYOTA MOTOR SALES, USA, INC.	*	December 7, 2005
	*	
	*	
	*	
	*	9:00 A.M.

TRANSCRIPT OF TRIAL
BEFORE THE HONORABLE DAVID FOLSOM
UNITED STATES DISTRICT JUDGE
AND A JURY

* * *

[13] MR. CORDELL: Thank you, Your Honor. Plaintiff calls Dr. Alex Severinsky.

THE COURT: If you will please be sworn.

ALEX SEVERINSKY, PLAINTIFF'S WITNESS, SWORN

DIRECT EXAMINATION

BY MR. CORDELL:

Q. Good morning, Dr. Severinsky.

A. Good morning, ladies and gentlemen.

[14] Q. Can you please introduce yourself to the jury?

A. My name is Alex Severinsky.

Q. And what do you do for a living, Dr. Severinsky?

A. I am chief executive officer of Paice and Plaintiff in this case.

* * *

[55] Q. All right. Well, Dr. Severinsky, have you been able to get any car company to actually sign up and take a license under these patents to date?

A. No, sir.

* * *

APPENDIX F

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PAICE, LLC	*	Civil Docket No.
VS.	*	2:04-CV-211
	*	Marshall, Texas
TOYOTA MOTOR CORPORATION, TOYOTA MOTOR NORTH AMERICA, INC., and TOYOTA MOTOR SALES, USA, INC.	*	December 7, 2005
	*	1:30 P.M.

TRANSCRIPT OF TRIAL
BEFORE THE HONORABLE DAVID FOLSOM
UNITED STATES DISTRICT JUDGE
AND A JURY

* * *

[2] PROCEEDINGS

COURT SECURITY OFFICER: All rise.

THE COURT: Please be seated. You may continue your cross examination.

MR. FLOCK: Thank you, Your Honor.

Q. (By Mr. Flock) Dr. Severinsky, when we took our lunch break I believe we were looking at DTX-25, if I can get that back up. And if I could again highlight that top box. So, we'd just finished looking at the battery situation and Toyota had the 201 volt battery,

[3] and I would like to go to the next line which called – described something called coupling.

And is the coupling there referring to what is coupling the engine to the drive wheels?

A. Yes, sir.

* * *

[42] Q. You had talked earlier about your decision to go forward in litigation when you were not able to sell your technology, when you were not able to license your technology since you started your business. I'd like to look at some – in light of that, some of the issues you looked at in your litigation.

MR. FLOCK: May I have PTX-76, please?

Q. (By Mr. Flock) And this is a September 2003 letter to the board of directors; is that correct?

A. Yes, sir.

MR. FLOCK: And if I could just go to the last page.

Q. (By Mr. Flock) And this reflects at that time –

MR. FLOCK: If I can have the heading.

Q. (By Mr. Flock) – the current idea for a plan [43] against Toyota, and let's look at the bullet points – that, one, you buy and test the Prius II. Kind of interesting is the third one. The third one is Paice needs to identify a business leader who will lead the

organization in an effort to enforce our patents against Toyota.

Next. With test results, secure interest of businessmen in the U.S. with past successful experience in winning IP cases against large companies.

And during the opening I believe that it was stated that Paice was in Virginia; is that correct?

A. At that time Paice was in Virginia.

Q. And let's see why that is. Moving – this bullet point, moving offices to Virginia will help in providing access to the rocket docket, fast track litigation.

Is it correct that Paice decided not to file in the rocket docket fast track of Virginia, but instead sued here in Texas?

A. Yes, sir.

* * *

APPENDIX G

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PAICE, LLC	*	Civil Docket No.
VS.	*	2:04-CV-211
	*	Marshall, Texas
TOYOTA MOTOR CORPORATION, TOYOTA MOTOR NORTH AMERICA, INC., and TOYOTA MOTOR SALES, USA, INC.	*	December 12, 2005
	*	9:00 A.M.

TRANSCRIPT OF TRIAL
BEFORE THE HONORABLE DAVID FOLSOM
UNITED STATES DISTRICT JUDGE
AND A JURY

* * *

[16] MR. FLOCK: Thank you, Your Honor. Toyota would call Shoichi Sasaki.

THE COURT: Ms. Martin, have you administered the oath to the interpreter?

COURTROOM DEPUTY: Yes, sir.

THE COURT: Please step forward. If you will please raise your right hand.

SHOICHI SASAKI, DEFENDANTS' WITNESS, SWORN

THE COURT: For the benefit of the jury, Mrs. Martin has also administered a separate oath to the person doing the interpreting.

[17] Is this cart going to be needed during this witness's testimony?

MR. FLOCK: I don't believe. We are not using it, Your Honor.

THE COURT: Why don't, Mr. Jordan, we move this cart a little.

Thank you.

MR. FLOCK: Your Honor, if I might just note, Mr. Akuhara is an interpreter off of the Court's official list of interpreters of Japanese and English. And Mr. Akuhara –

THE COURT: By way of information, Mr. Flock's comment is correct. When we have the need for an interpreter, we have an official list of interpreters in a number of languages and those interpreters are approved by the court system.

Thank you.

MR. FLOCK: Thank you, Your Honor.

And Mr. Akuhara, I'm going to start in English, and you don't need to interpret this.

DIRECT EXAMINATION

BY MR. FLOCK:

Q. Mr. Sasaki, would you give us your name, please?

A. My name is Shoihi [sic] Sasaki.

[18] Q. And where do you live? Where do you live?

A. I live in Japan.

Q. And are you married?

A. Yes, I am married.

Q. And do you have any children?

A. I have two children.

Q. And how old are they?

A. My daughter is 26 and my son is 22.

Q. Have you ever presented any technical papers or speeches in English?

A. Yes; once.

Q. And given the importance of the testimony here and the words, Mr. Sasaki, would it be okay with you if we use the interpreter to interpret the questions and answers?

A. Please.

Q. We will use Mr. Akuhara to help us with the questions and answer in Japanese.

A. Yes, please.

Q. And first, have you ever testified before in court?

A. I've never.

MR. FLOCK: And Mr. Akuhara, if I could get your help at this point.

REPORTER'S NOTE: The following questions [19] and answers were made through the interpreter.

Q. (By Mr. Flock) Mr. Sasaki, what company do you work for?

A. I work at Toyota Motor Corporation.

Q. And at Toyota, what is your title?

A. I am a project general manager.

Q. And what are you in charge of?

A. I am in charge of advanced hybrid development.

Q. And would those hybrids include the Prius?

A. Yes. They do include the hybrid.

* * *

[34] Q. Now, how many hybrid options have you considered?

A. Six types.

Q. And why did you choose the type shown in Row 6?

A. This configuration is very simple and yet it is very sophisticated in terms of fuel economy and acceleration performance.

MR. FLOCK: Ben, is it possible to keep this up and also get the last box or do you have to get rid of this to do it?

TECHNICAL PERSON: The last box?

MR. FLOCK: The last column from Row 6, [35] can I get that also?

Okay. Leave me that up and let me just go to the ELMO.

Q. (By Mr. Flock) I want to show you the last box out of this sixth row – I'm sorry, wrong row. Sixth row, and let me slide it over.

In looking at your Japanese document, Mr. Sasaki, can you tell me what it says here?

A. TRW Aerospace is written.

Q. And why, in describing this configuration, did your group write TRW Aerospace for this design?

A. While researching past Toyota documents, one of the members of my team discovered a summary report of a TRW document that was submitted to the EPA.

Q. And was that a public document, that TRW document?

A. Yes, it was.

Q. And how did the design of that TRW document relate to the design being considered by Toyota?

A. A configuration very similar to what is written in six was written in that document.

Q. And was that the TRW design?

A. Yes, that's correct.

Q. And in this older Toyota report, had Toyota formed a conclusion about the TRW design?

[36] A. That older report had written in it that it would serve as a guide for hybrid designs moving forward.

Q. As of 1995, are you aware or not of whether or not the TRW/Berman patent had expired?

A. Yes, I knew that.

Q. And did you have an understanding as to whether or not the TRW design was then publicly available?

A. Yes, I believe that it could be or was available.

* * *

APPENDIX H

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PAICE, LLC	*	Civil Docket No.
	*	2:04-CV-211
VS.	*	Marshall, Texas
	*	
TOYOTA MOTOR CORPORATION, TOYOTA MOTOR NORTH AMERICA, INC., and TOYOTA MOTOR SALES, USA, INC.	*	December 13, 2005
	*	
	*	
	*	
	*	1:35 P.M.

TRANSCRIPT OF TRIAL
BEFORE THE HONORABLE DAVID FOLSOM
UNITED STATES DISTRICT JUDGE
AND A JURY

* * *

[88] MR. FLOCK: Thank you, Your Honor. Toyota calls David Hermance.

[89] DAVID HERMANCE, DEFENDANTS' WITNESS, SWORN

DIRECT EXAMINATION

BY MR. FLOCK:

Q. Mr. Hermance, will you tell the jury your name and where you live?

A. My name is David Hermance, I live in Huntington Beach, California.

Q. And are you married? Do you have any children?

A. Yes, I am married and I have two grown and married children; my daughter is 30, and my son is 28.

Q. I think the jury will learn that you are an engineer, but do you have any hobbies that relate to your engineering?

A. Indirectly related. I maintain and fly airplanes.

Q. And what kinds of planes are those?

A. Aerobatic toys.

Q. And for what company do you work?

A. I work for Toyota's technical center based in Gardena, California.

Q. I'm sorry. You said aerobatic toys, do you mean you actually fly planes?

A. Yes. Not model airplanes, full size aircraft.

[90] Q. What kind of technical degree do you have?

A. My degree is a Bachelor of Science Degree in industrial engineering from General Motors Institute.

Q. And were you working at the time you got your degree?

A. Yes, sir.

Q. Where were you working?

A. I worked for General Motors Allison Division from 1965 through granting the degree and for awhile after.

Q. And what was your last position at General Motors?

A. I worked for General Motors Proving Grounds. I was the department head of a group called product usage measurements and applications.

Q. And what kind of – in lay person, what did you actually do? What did your group do?

A. The group was responsible for measuring how customers used cars in the United States and then converting usage information into statistical estimates of severity and then creating durability tests to improve the durability of General Motors cars.

Q. And to do that did you work with real people actually who owned the cars?

A. Yes. We actually instrumented customer-owned [91] vehicles.

Q. When did you join Toyota?

A. I joined Toyota in February of 1991.

Q. And why did you join Toyota?

A. I got an offer I couldn't pass up, a financial offer that was better than what I was making, an

opportunity to manage in a growing company and an opportunity to move to California instead of Michigan.

Q. And what job did you get at Toyota?

A. My first position at Toyota was as manager of vehicle evaluation; vehicle power train evaluation actually.

Q. And what was your next position after that?

A. Within about a year I was promoted to general manager of power train for Toyota's technical center.

Q. And when you – you used the term power train. What does that mean?

A. Power train and drivetrain are often used interchangeably. They generally refer to the engine, transmission and final drive, whether it's a front drive or a rear drive vehicle.

Q. Is it your understanding that it's this power train or drivetrain that's involved in this case?

A. Yes, sir, that is my understanding.

Q. Does Toyota invest in research and [92] development?

A. Yes, sir, they do indeed.

Q. And how much?

A. In each of the last two years in excess of 6 billion dollars U.S.

Q. Does Toyota make cars in the United States?

A. Yes, sir, we do.

Q. And where do you – does Toyota manufacture in the U.S.?

A. Manufacturing for full vehicle assembly is in a joint venture with General Motors in Fremont, California. That's up around San Francisco. We have a large plant in Lexington, Kentucky. We have another large plant in Princeton, Indiana. We have a plant under construction in San Antonio, Texas, and we have an engine plant in West Virginia.

Q. And when will the San Antonio plant come on line?

A. The expectation is it will begin building cars in the fall of – actually trucks in the fall of 2006.

Q. Does Toyota have any testing grounds in the United States?

A. Yes, sir. We have a proving grounds outside Phoenix, Arizona actually 12,000 acres, a very large [93] proving ground.

Q. What is your current title, Mr. Hermance?

A. My current job title is executive engineer for advanced technology vehicles.

Q. And do these advanced technology vehicles include hybrid cars?

A. Yes, sir. They include hybrid cars, electric vehicles and fuel cell vehicles.

* * *

[142] Q. When was Prius first sold in the United States?

A. Prius was introduced in the United States in July of 2000 as a 2001 model year vehicle.

Q. And how did the U.S. 2000 sale, the Prius that was sold in 2000 in the U.S., how does that compare to the '97 Prius sold in Japan?

A. Biggest difference is the steering wheel is on the left side instead of on the right side. There are also significant differences – well, there are also incremental improvements in the technology that was used [143] in the vehicle. The vehicle was made two seconds faster zero to 60, to better meet American market needs. And there were some changes in the exhaust emission control system to meet more stringent U.S. environmental standards. And the vehicle got better fuel economy.

Q. So, the U.S. version sold in 2000 was not identical to the '97 Japanese version?

A. There were subtle differences in the Toyota process called continuous improvement. There were improvements made to the vehicle, that's correct.

Q. The basic drivetrain, the hardware we saw before, the motors and planetary gears, et cetera, did that remain the same?

A. Yes, sir.

Q. Did the operating mode, the way that decisions got made and when to switch to electric, when to switch to gas, did those change?

A. No, sir.

Q. And was there later a – another Prius, a Prius II that was developed and sold?

A. Yes, sir. That vehicle was introduced to the United States market in October of 2003 as a 2004 model year vehicle.

Q. So, I am just going to call that Prius II as I think we've done in this case.

[144] What were the differences between the Prius II and the earlier Prius sold in the U.S.?

A. Well, the most obvious difference was it was a new body. It was a larger body. It was a lift-back body instead of a sedan. It was larger inside and nice – more nicely finished. It had more interior space. It was again quicker by a little over 2 seconds than the previous vehicle. Got better fuel economy and brought – would – would be applicable to a broader segment of the market because it was a mid-sized car instead of a compact class car.

Q. And how did Toyota achieve its improvements in this Prius II?

A. A philosophy known as continuous improvement. There were several incremental changes made to the vehicle in essentially every system in the – in the vehicle. The most significant difference was the addition of a new higher power density battery that allowed us to use less battery, and a boost converter to allow the motors to operate at higher voltage so that we could make them more powerful but not make them bigger.

Q. And I won't have you go through this in much detail.

MR. FLOCK: I just want to put up DTX-144.

[145] Q. (By Mr. Flock) This is the new car features manual from 2004.

There was some testimony when you weren't here, Mr. Hermance – I want to try to illustrate.

MR. FLOCK: If I could get TPR-003156.

Q. (By Mr. Flock) Is this an illustration of the Prius II?

A. Yes, sir; what is referred to as a shadow diagram that shows the basic location of components in the vehicle.

Q. We are now blowing up this shadow diagram of the car. Can you indicate where the battery is in the Prius II?

A. The battery in this vehicle is located in the rear of the vehicle behind the rear axle. It's actually – you can't see it in the diagram, but it's under the floor of the rear load space, so it is out of sight in the vehicle.

Q. And how is the battery connected to the components in the front of the vehicle?

A. This is the power cable coming from the battery through the floor up to the power electronics and the inverters.

Q. And about how long is that cable?

A. It's approximately 10 feet.

[146] Q. And this shows something called a hybrid transaxle. Is that what we were looking at earlier in the picture?

A. Yes. That would be – that would include motor generator 1, motor generator 2, and the planetary gear set.

Q. Okay. And then is this part the engine?

A. Yes, sir.

Q. And then there's another box here, which it says, inverter assembly. What's that?

A. That's the power electronics for the system. It includes the AC to DC or the DC to AC inverter. It includes the boost converter, it includes the DC to DC 12 volt converter.

Q. So, the boost converter for Prius II, is it located with the battery?

A. No, sir.

Q. Is it part of this box with the inverter?

A. Yes, sir.

MR. FLOCK: And if I could go to TPR-3198. If I could just blow up the picture.

Q. (By Mr. Flock) Before we saw the word inverter assembly, is this part of the inverter assembly?

A. It is a part of the inverter assembly, yes, [147] sir.

Q. So, in the car is there actually a package that's called – that you refer to as the inverter assembly?

A. Yes, sir.

Q. And packaged with the inverter is the boost converter?

A. Yes, sir, that's correct.

Q. And what's the function of the inverter?

A. The inverter changes the DC voltage to AC voltage for use in the MG1 and in MG2.

Q. Now, in this particular diagram they show the battery like right next to it. Is that the way it really is in the car?

A. No, it's 10 feet away.

MR. FLOCK: Could I go to the previous – back to the cut-away of the body?

Q. Okay. I will say here for a moment. Mr. Hermance, do you know with the battery, what's the rated power of the battery?

A. The battery is rated for power of approximately 20 kilowatts.

Q. And the battery operates at what voltage?

A. The battery voltage is 202 volts DC.

Q. And what's the approximate current associated [148] with that?

A. It would be a hundred amps from the battery forward, under that 20 kilowatt power.

Q. And for the output of the boost converter at 500 volts, what would the current be?

A. It's the same 20 kilowatts, so at 500 volts it would be 40 amps DC.

Q. For the input of MG2, do you know what that current would be?

A. MG2 is a 50 kilowatt electric machine operating at a maximum of 500 volts, so that would be 100 amps AC.

Q. And is there current supplied always by MG1?

A. MG1 provides current back to the inverter that is subsequently fed to MG2.

* * *